

UNITED STATES PATENT OFFICE.

GEORGE W. MILLER, OF KALAMAZOO, MICHIGAN.

SURFACE CATTLE-GUARD.

SPECIFICATION forming part of Letters Patent No. 473,327, dated April 19, 1892.

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To all whom it may concern:

Be it known that I, GEORGE W. MILLER, a citizen of the United States, residing at Kalamazoo, county of Kalamazoo, State of Michigan, have invented a new and useful Surface Cattle-Guard, of which the following is a specification.

This invention relates to that class of surface cattle-guards which are made in sections from a single plate of metal.

One object of this invention is to produce a simple, strong, and successful guard against animals crossing it; and it consists in construction in which a single plate is employed having either raised or depressed ribs alternating with flat surfaces, said flat surfaces being provided with upwardly-extending tongues or points.

Other objects will appear in the following description.

In the drawings forming a part of this specification, Figure 1 is a plan view; Fig. 2, broken lettered details enlarged from Fig. 1. Fig. 3 shows broken lettered details enlarged from Fig. 2; and Fig. 4 shows a broken portion of a guard-section in transverse section, showing changes from Figs. 1 and 2.

In Fig. 1 a single section of the guard is shown on the outside of one of the rails of the track, it being understood, of course, that other guard-sections would be employed to fill in between the rails of the track and outside of the other rail, which are not here shown.

In Figs. 1 and 2 the metal plate is bent to form rib portions A, alternating with flat portions B, said rib portions extending upward from the flat portions at their base. The flat portions B are provided with a series of upwardly-extending tongues or projections C, which are made by making gashes in the metal in something of the form of a V and then bending the tongues upward from said gashes, as clearly shown in Figs. 2 and 3. The ribs A are made higher than the tops of the tongues C, both sides of said ribs diverging to the flat portions, which they join. These ribs are too far apart for an animal to set one foot upon two of them, and hence the foot of the animal would slide down the incline, and since it would be impossible to walk on said tongues and over the surface which they occupy a successful cattle-guard is produced. If any

of the train-men should be accidentally thrown upon the guard shown in Figs. 1 and 2, the upwardly-projecting ribs would protect them from any injury from the tongue C. Forming the ribs out of a solid plate stiffens said plate, and hence will make a strong guard and require less support beneath it. The open ends of the ribs may be closed by making a gash from the end for a short distance in the longitudinal center of the ribs and then bending the corners over, so as to lap one upon the other, as shown at E, Fig. 2, thus making the closed ends on an incline and preventing anything catching into said ends.

A change is shown in Fig. 4, which merely consists in depressing the ribs and elevating the flat portions, which alternate with each other, as shown at A' and B. The flat portions B in this view are provided with a series of upwardly-projecting tongues C, like those in Figs. 1 and 2.

In Fig. 3 is shown one of the tongues C in cross-section, showing how the tongues are struck in from one side, so as to curve their edges and make the tongue somewhat dishing, thus stiffening the same. If preferred, the tongues may be made without dishing them.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. Surface cattle-guard sections composed of a plate of metal bent to form ribs with slanting sides, alternating with flat portions, said flat portions being provided with a series of upwardly-extending tongues or projections, substantially as set forth.

2. Surface cattle-guard sections composed of a plate of metal bent to form ribs with slanting sides, alternating with flat portions, said flat portions being provided with a series of upwardly-extending tongues or projections and said ribs having portions of the metal at the ends folded over to close said ends and form a closed inclined end, substantially as set forth.

In testimony to the foregoing I have hereunto subscribed my name in the presence of two witnesses.

GEORGE W. MILLER.

Witnesses:

JACOB REIDSENN,
HORACE G. HAINES.