

(No Model.)

G. W. MILLER.  
SURFACE CATTLE GUARD.

No. 480,733.

Patented Aug. 16, 1892.

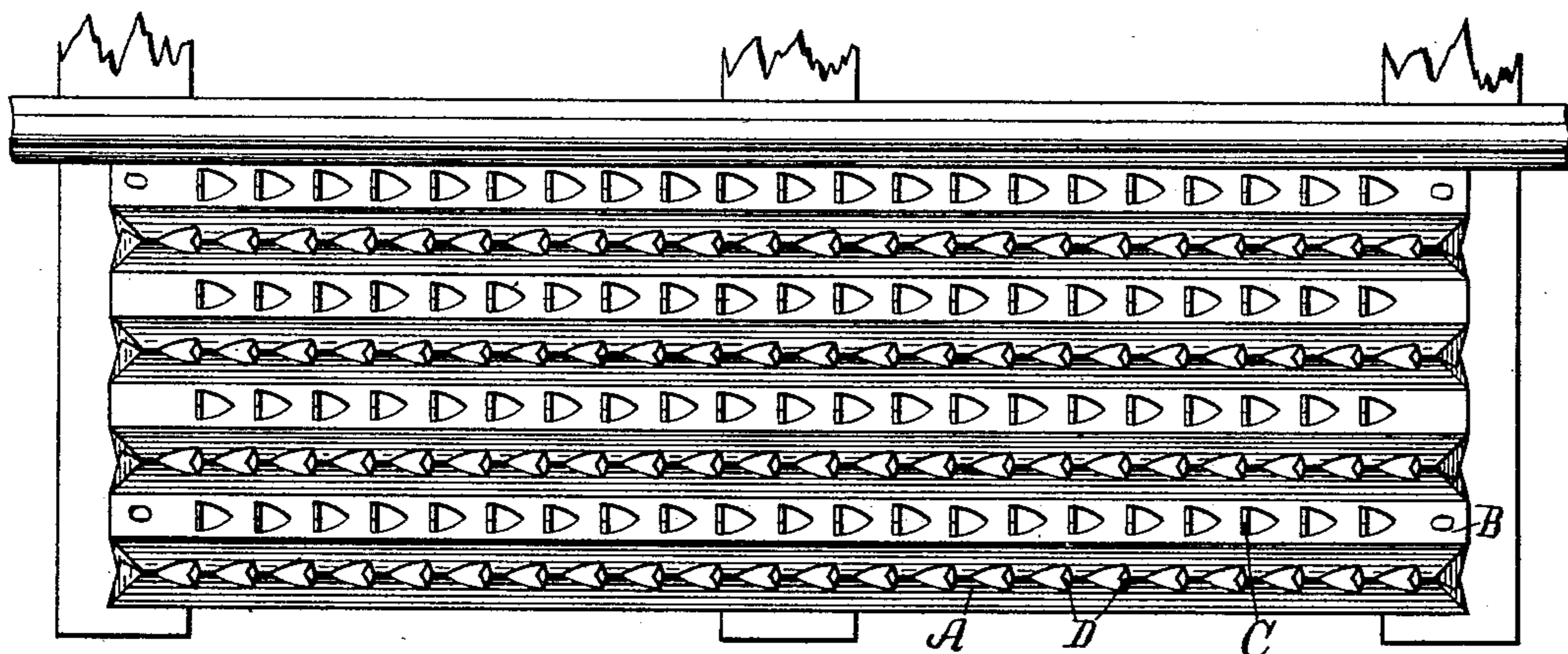


Fig. 1

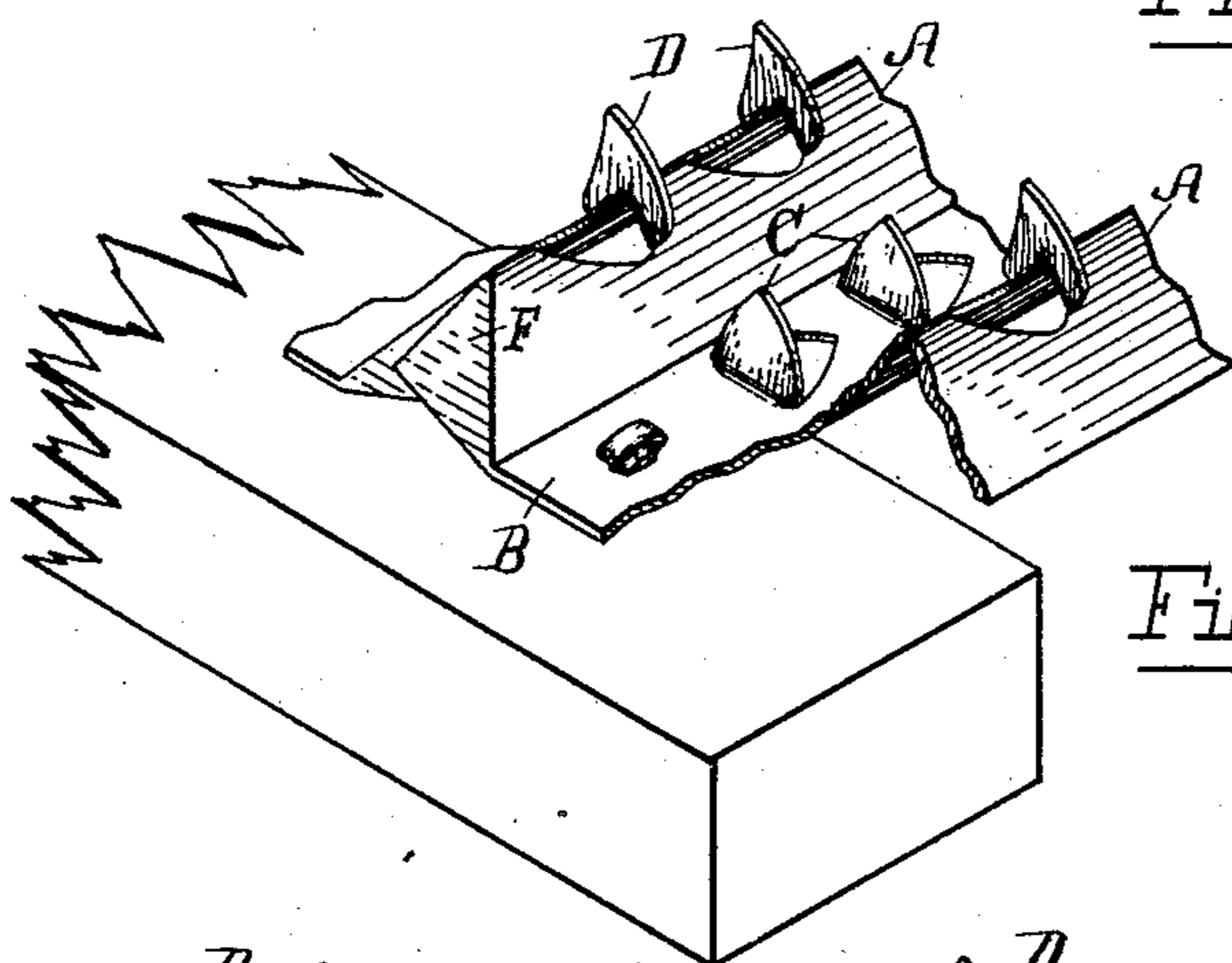


Fig. 2

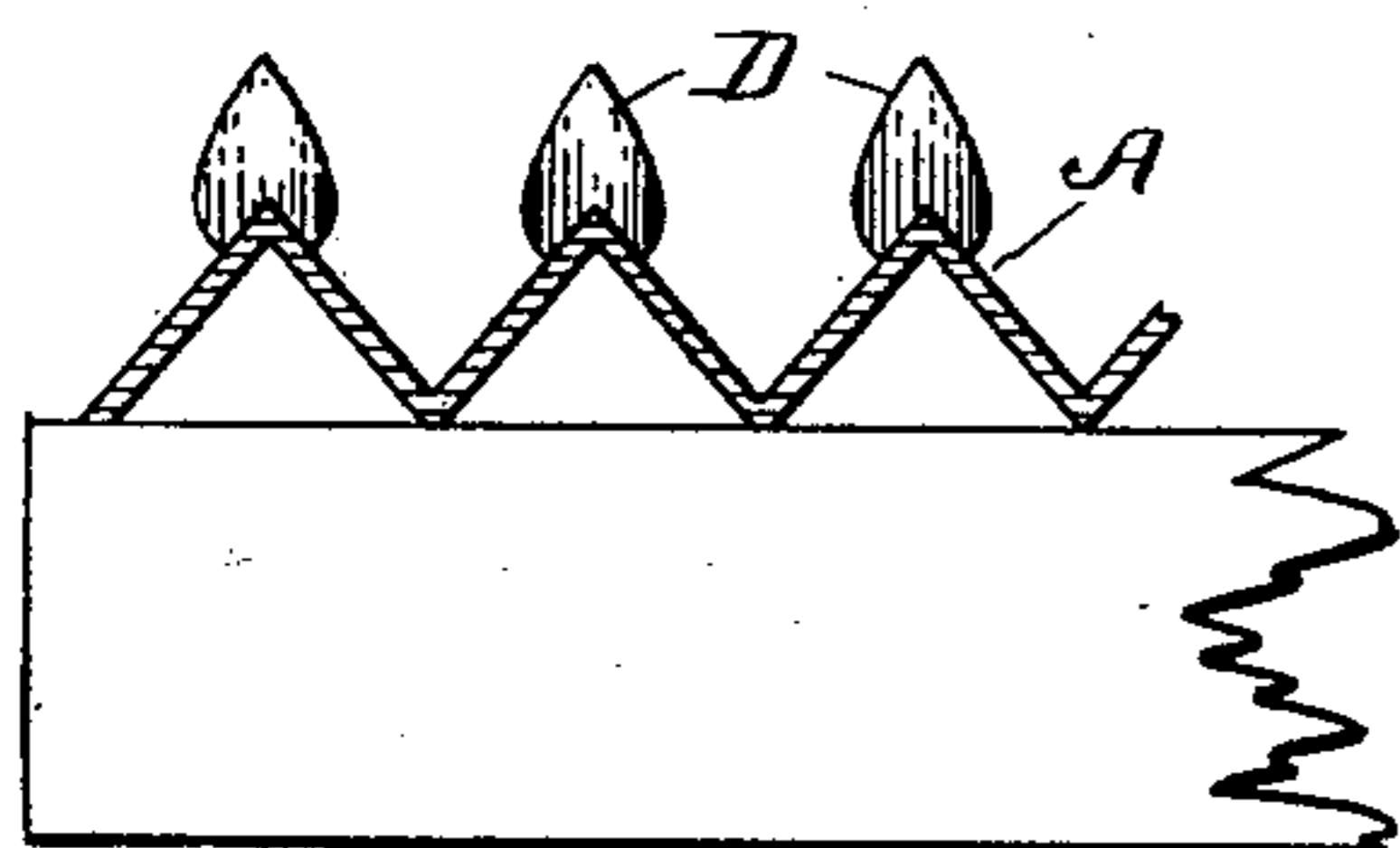


Fig. 3

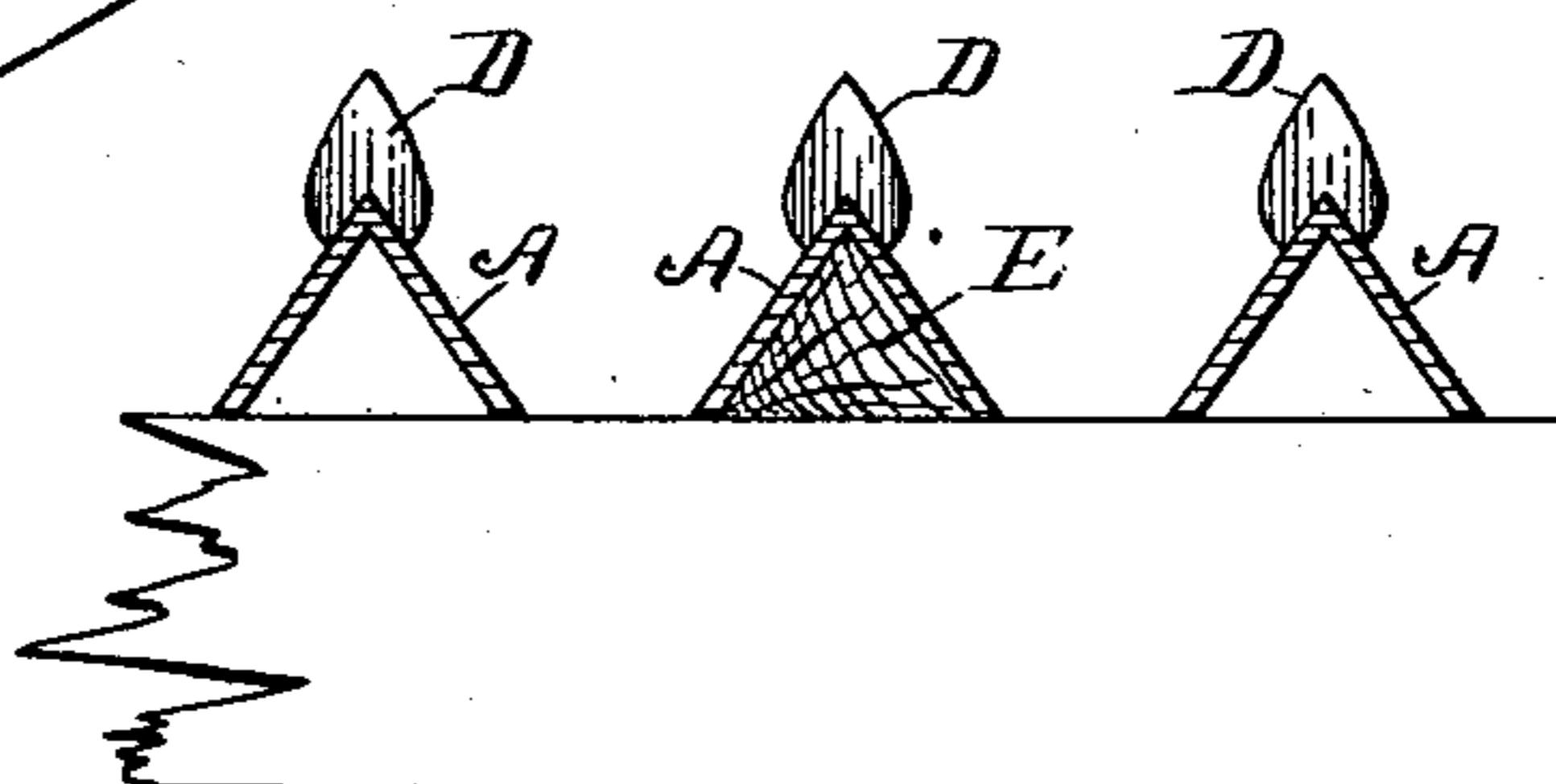


Fig. 4

Witnesses:

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# UNITED STATES PATENT OFFICE.

GEORGE W. MILLER, OF KALAMAZOO, MICHIGAN.

## SURFACE CATTLE-GUARD.

SPECIFICATION forming part of Letters Patent No. 480,733, dated August 16, 1892.

Application filed January 12, 1892. Serial No. 417,820. (No model.)

*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 employed between and outside of the rails of the track having separated bars or raised portions running parallel with said rails and with each other, whether formed from a single plate of metal or from individual bars.

A principal feature of this invention consists in making the guard-sections from a single plate of metal having upwardly-projecting ribs alternating with depressed portions, the apex of said ribs being provided with upwardly-extending tongues or projections D, cut and thrown up from the metal itself, whereby the guard more successfully prevents animals from crossing the same.

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

A guard-section is represented in Fig. 1 on the outside of one of the rails of the track; but of course in use sections would be employed between and outside of the rails. This section is formed by bending a single plate of metal so as to form upwardly-projecting ribs A, something in the form of an inverted V, alternating with flat surfaces B. The guard-sections may be made in this manner, or they may be made from a single strip of metal in which the alternating flat surfaces B do not appear, as in Fig. 3, or they may be made from inverted-V-shaped bars A, separated from each other, as in Fig. 4, the main point in this invention being to provide the apex or upper portion of these ribs or bars A with a series of tongues D, extending upwardly therefrom, said tongues being formed by gashing the metal in something the form of a V and bending the tongues upward therefrom. The guard may be made entirely as in Fig. 2, in which the alternating surfaces B are also provided with upwardly-extending tongues C, like those at D. The open spaces beneath the ribs or bars A may be filled with strips of wood, as at E in Fig. 4, more espe-

cially when the ribs or bars are separated, as in said figure, thus imparting to them greater solidity. The open ends of the ribs or bars A may be closed in any suitable manner to prevent any hanging or trailing portion of the cars from catching on said ends.

The plan shown in Fig. 2 is to make a gash a short distance from the end in the longitudinal center of the rib or bar A and then fold the corners of the metal over one upon the other, as at F. This plan is illustrated and described in another pending application bearing even date herewith, as is also the guard-section illustrated in Fig. 2, with the exception of the tongues D, thrown up from the apex of the ribs A.

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

1. A surface cattle-guard composed of sections formed from a single plate of metal bent to form upwardly-projecting ribs alternating with depressed surfaces, the apex or upper portion of said ribs being provided with upwardly-projecting tongues cut and thrown upward from the metal forming said ribs, substantially as set forth.

2. A surface cattle-guard composed of inverted-V-shaped ribs or bars provided with upwardly-extending tongues cut and thrown upward from the metal forming said bars or ribs, substantially as set forth.

3. A surface cattle-guard composed of inverted-V-shaped ribs or bars provided with upwardly-extending tongues cut and thrown upward from the metal forming said bars or ribs and strips of wood filling the hollow spaces beneath said bars or ribs, substantially as set forth.

4. A surface cattle-guard composed of sections formed from a single plate of metal bent to form upwardly-projecting ribs alternating with depressed surfaces, the apex of said ribs and the alternating depressed portions being provided with upwardly-projecting tongues cut and thrown upward from the metal forming the guard-sections, 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 REIDSEMA,  
HORACE G. HAINES.