(No Model.) 2 Sheets—Sheet 1.

F. G. BOTSFORD & D. BALDWIN, Jr.

CATTLE GUARD.

No. 550,816. Patented Dec. 3, 1895.

Fig 2.

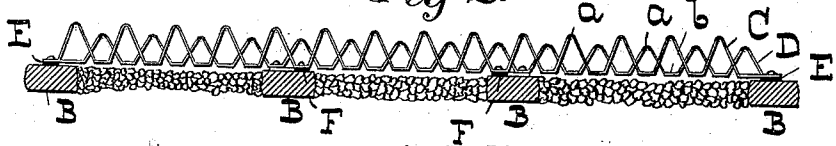


Fig 1.

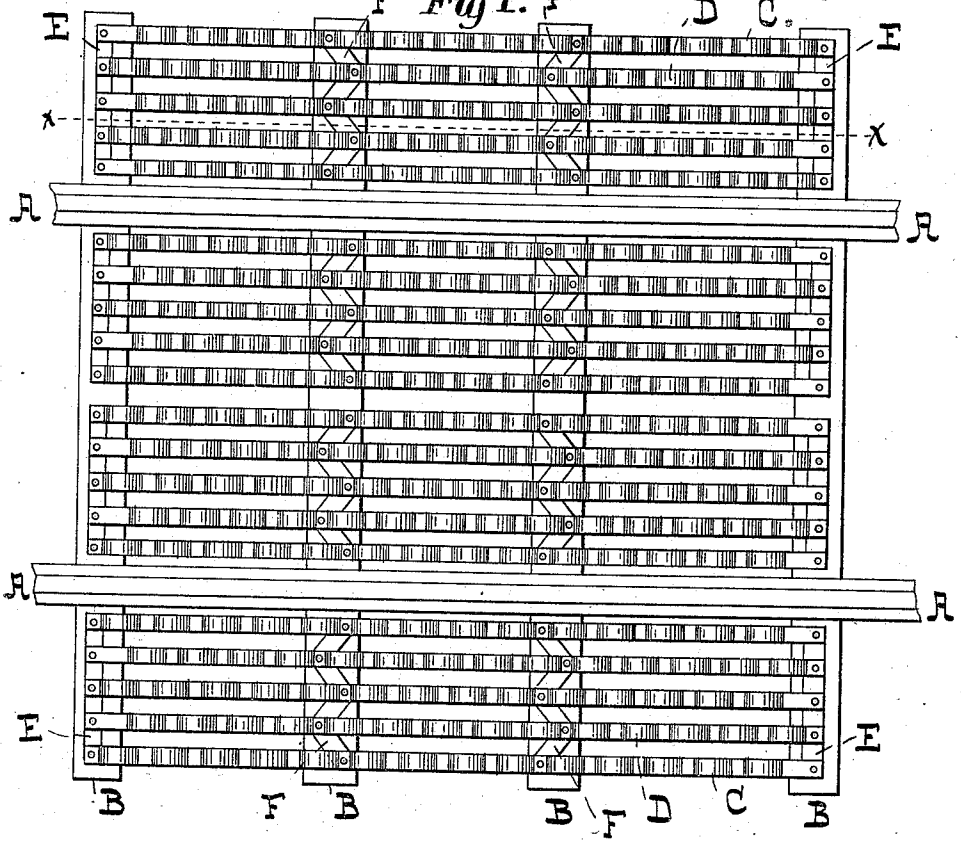
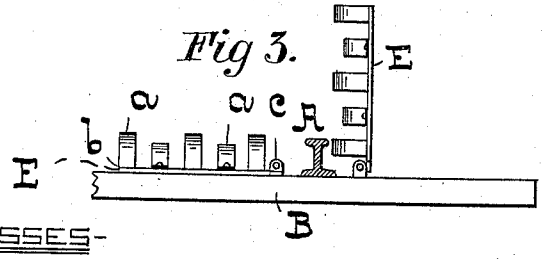


Fig 3.



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(No Model.) 2 Sheets—Sheet 2.

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Fig 5.

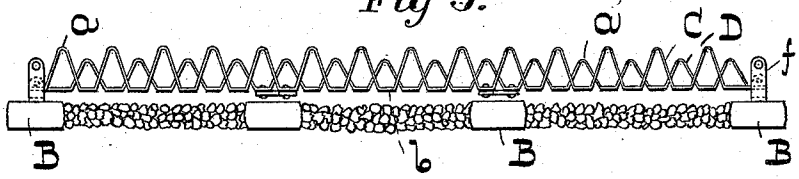


Fig 6

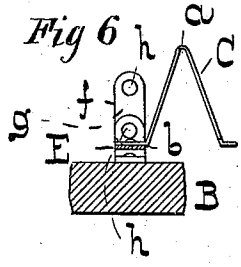


Fig 7.

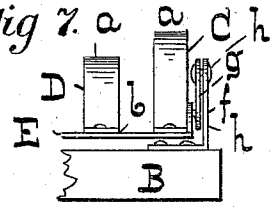
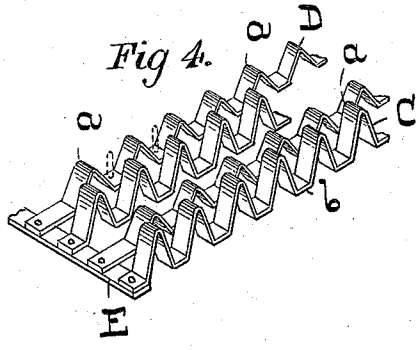


Fig 4.



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UNITED STATES PATENT OFFICE.

FREDERICK G. BOTSFORD AND DUDLEY BALDWIN, JR., OF CLEVELAND, OHIO.

CATTLE-GUARD.

SPECIFICATION forming part of Letters Patent No. 550,816, dated December 3, 1895.

Application filed February 7, 1895. Serial No. 537,600. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK G. BOTSFORD and DUDLEY BALDWIN, Jr., of the city of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain Improvements in Cattle-Guards, of which the following is a specification.

In the description of the said invention which follows reference is made to the accompanying drawings, forming a part hereof, and in which—

Figure 1 is a top or plan view of a portion of a railway-track together with our improved cattle-guard. Fig. 2 is a cross-section of Fig. 1, taken on the dotted line *x x*. Fig. 3 is an end view of one track-rail and a part of the cattle-guard. Fig. 4 is a perspective view of a part of the guard. Fig. 5 is a view similar to Fig. 2, illustrating a modification in the construction of the guard hereinafter described. Figs. 6 and 7 are enlarged details of the cattle-guard illustrated in Fig. 5.

Referring now to Figs. 1 to 4, inclusive, A represents the track-rails, and B the cross-ties to which the rails are fastened.

The cattle-guard consists of a system of bars C and D, bent so as to present pointed projections *a*, extending from the base-line *b*, and the said bars are laid alternately and longitudinally of the track-rails and at proper distances apart. The pointed projections *a* of the bars C are higher than those of the bars D. Consequently there is a row of high points and then a row of low points, and this alternate arrangement exists throughout the entire system of bars C and D. The bars C and D are arranged, preferably, in four sections—that is to say, there is a section outside of each track-rail and two sections inside or between the track-rails. (See particularly Fig. 1.) The bars C and D of each section are connected at their ends to straight base-plates E, which rest on the cross-ties B, and between their ends to other base-plates F, which rest on the intermediate cross-ties. The points of the bars C come between those of the bars D, (see Fig. 2,) and in view of this arrangement of the bars the intermediate base-plates F are made zigzag, which allows of the bars being attached to them at the bases or roots of the projecting points, as will be seen by reference to Fig. 1. The object in having the pointed projections of different heights is to increase the roughness of the cattle-guard, and this roughness is further increased by having the points staggered or arranged *en echelon*, as described.

Each section of the guard is hinged to the cross-ties near to the rails A, so that it may be raised, as illustrated in Fig. 3, where a hinge is shown and marked *c*. The object in hinging the sections as described is to admit of the removal of snow and dirt, which, if allowed to remain, would materially reduce the efficiency of the invention.

Pointed rods may be employed between the pointed projections, as shown in dotted lines in Fig. 4, if desired; but this addition is not deemed important, as the bars, bent and arranged as described, will fully meet the requirements of a cattle-guard.

Referring now to Figs. 5, 6, and 7, it will be seen that the bars C and D, together with their base-plates, are hung from standards *f* by means of links *g* and pivots *h*, so that the portion of the guard upon which cattle will step has a swinging motion. This feature is deemed valuable for the reason that cattle hesitate to walk on a movable surface without reference to the details of its construction.

We claim as our invention—

1. In a cattle guard, two series of bars bent so as to form pointed projections, placed longitudinally of the track rails, the projections of one series C, being higher than those of the other series D and opposite the depressions between them, and both series secured to base plates parallel to and above the cross ties, and hinges securing the guard to the cross ties, all in combination, substantially as specified.

2. The combination, in a cattle guard consisting of independent sections, of two series of bars bent so as to form pointed projections, the projections of one series C, being higher than those of the other series D and opposite

the depressions between them, both series being secured to base plates at a right angle thereto, but parallel with and above the cross ties, and hinged link connections between the guard sections and the cross ties, whereby the sections can be raised for cleaning and repairing purposes, and when in place shall have a vibratory movement when stepped upon, substantially as specified.

FREDERICK G. BOTSFORD.
DUDLEY BALDWIN, JR.

Witnesses:
HERBT. W. WOLCOTT,
GEO. A. EDDY.