

No. 640,940.

Patented Jan. 9, 1900.

W. T. PAYNE.
CATTLE GUARD.

(Application filed Oct. 30, 1899.)

(No Model.)

FIG. 1

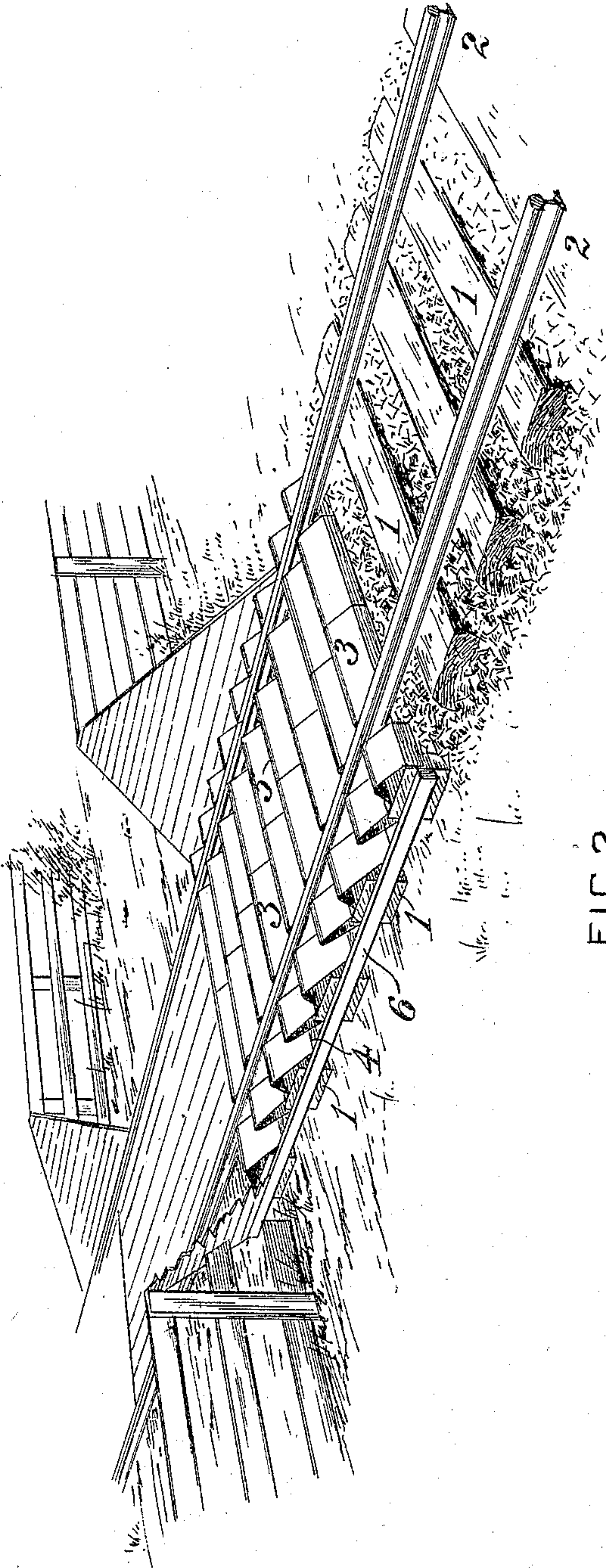
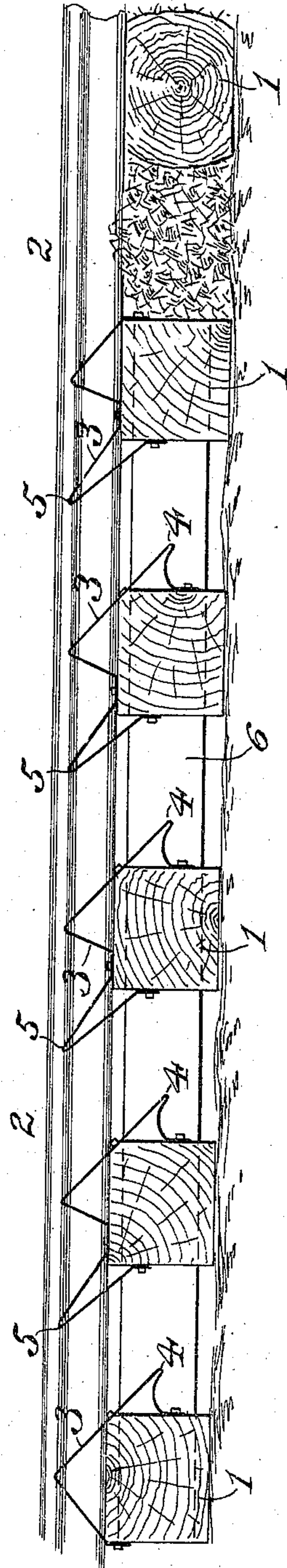


FIG. 2



WITNESSES:

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WILLARD T. PAYNE, OF TACOMA, WASHINGTON.

CATTLE-GUARD.

SPECIFICATION forming part of Letters Patent No. 640,940, dated January 9, 1900.

Application filed October 30, 1899. Serial No. 735,179. (No model.)

To all whom it may concern:

Be it known that I, WILLARD T. PAYNE, of Tacoma, in the county of Pierce and State of Washington, have invented a certain new and useful Improvement in Cattle-Guards, of which improvement the following is a specification.

My invention relates to surface cattle-guards for railroads; and its object is to provide a cattle-guard of this type which shall effectively prevent the access of cattle from grade-crossings to the adjoining right of way and which shall further present the advantages of comparatively slight cost, capacity of ready attachment and of removal in sections for renewal in the event of damage when desired, and freedom from interference with repairs of track other than renewal of a tie or ties upon which it is placed.

The improvement claimed is hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a view in perspective of a cattle-guard embodying my invention as applied at a road-crossing, and Fig. 2 a longitudinal central section through the same.

In the practice of my invention I connect to a number of the cross-ties 1 of a railroad-track, as, say, five, more or less, on one or both sides of a cross-road, station-grounds, or other place open to the inclosed right of way of a railroad, a sectional sheet-metal cattle-guard, two sections of which are secured to each of the ties between the rails 2 and two sections to each tie, one on the outer side of each of the rails. Proper space for flange and wheel clearance is of course left at the sides of the rails. The road-crossing is planked and fenced in the ordinary way, and the right-of-way fences are connected in any suitable and preferred manner.

The cattle-guard sections are formed of sheet metal about one-eighth of an inch in thickness, bent into such form and secured in such relation to the ties as to prevent the advance of an animal from the crossing over the cattle-guard to the right of way beyond the same. The essential feature of my invention by which this end is attained consists in the combination of a cattle-guard section secured to a tie and having what may be termed a "resistance" edge located in rear of said

tie—that is to say, on the farther side thereof in the direction in which advance of the animal is to be prevented—and between the top and bottom of the tie, and another cattle-guard section secured to the adjacent face of the next tie and having what may be termed a "fulcrum" edge located in front of and above said tie. An open space is thereby presented between said resistance and fulcrum edges into which the foot of the animal slips, and in its attempt to advance its heel bears against the resistance edge and the front of its leg against the fulcrum edge, by which it is held as against forward movement, but is released as soon as it begins to move backward.

In the embodiment of my invention which is herein exemplified a resistance edge 4 is formed upon the rear and a fulcrum edge 5 upon the front portion of each of the cattle-guard sections 3, the resistance edge of each section cooperating with the fulcrum edge of the section succeeding it. Under such construction, which is a desirable one in practice, each section is a unitary plate of sheet metal bent so as to present four inclined and one horizontal face. The rear inclined face is secured at its middle portion to the rear top edge of the tie, which is slightly chamfered off to provide a bearing for it, and the resistance edge 4 is formed at its bottom, standing in rear of and about at the middle of the height of the tie. Below the resistance edge the metal of the section is bent inwardly toward the tie and is secured near its lower edge thereto. The rear inclined portion extends to an edge or turn at a height of four inches, or thereabout, above the top of the tie, from which edge the metal of the section is bent downwardly, in reverse direction, to the top of the tie, at the level of which it is bent to form a narrow horizontal portion through which a line of fastenings, as lag-screws or light spikes, may be driven into the tie. The section is thence again bent upwardly, in the same direction as the rear inclined portion, to the fulcrum edge 5, which stands in front of the tie and at the same height above it as the top edge or turn of the rear inclined portion. The section is thence bent downwardly, and the lower portion of its downward extension is secured to the front side of the tie.

The several turns or edges of the metal are formed by bending it in curves of short radius, as shown in Fig. 2, and not by making sharp angles, so as to avoid the cracking of the sheets as well as the presentation of sharp edges, which would tend to injure the legs of animals.

The ties which carry the cattle-guard sections are not surrounded by ballast, the spaces between them being left entirely open, so that the feet of an animal may rest upon the ground at the proper distance below a resistance edge to make the latter effective against the animal's heels when standing on the level of the bottoms of the ties. Timber strips 6 are spiked to the ends of the ties to prevent them from drifting and may be used to support portions of the connecting-fences at the crossing.

It will be obvious to those familiar with maintenance of way that the structural details of my invention may be modified in different particulars without departure from its essential and governing principles. Thus instead of forming both the fulcrum and resistance edges upon a single sheet of metal, as shown, the sections 3 may be divided longitudinally on the tie, one portion containing the fulcrum edge and the other the resistance edge. Again, a single cattle-guard section may, if preferred, be fixed to each tie between the rails instead of two sections. The specific angles of inclination of the faces of the sections and the distances of their edges or turns from the ties are not essentials, and in these particulars such variations as may be required by the dimensions and spacing of the ties will be within the discretion of the constructor.

I claim as my invention and desire to secure by Letters Patent—

1. A metallic cattle-guard section having an inclined face with a fulcrum edge on its lower side adapted to project from one side of a cross-tie, between the top and bottom thereof,

and an inclined face with a resistance edge on its upper side adapted to project above and beyond the opposite side of the tie.

2. A metallic cattle-guard section having an inclined face with a fulcrum edge on its lower side adapted to project from one side of a cross-tie, between the top and bottom thereof, an inclined face with a resistance edge on its upper side adapted to project above and beyond the opposite side of the tie, an intermediate horizontal face adapted to abut against the top of the tie, and inclines connecting the front and rear faces with the intermediate face.

3. In a railroad cattle-guard, the combination of a metallic guard-section secured to a cross-tie and having a fulcrum edge on its lower side projecting from the tie between the top and bottom thereof, and a metallic guard-section secured to an adjacent tie and having a resistance edge projecting beyond and above the top of said tie.

4. In a railroad cattle-guard, the combination of a metallic guard-section secured to a cross-tie and having an inclined face with a fulcrum edge on its lower side projecting from the tie between the top and bottom thereof, and a metallic guard-section secured to an adjacent tie and having an inclined face with a resistance edge on its upper side projecting beyond and above the top of said tie.

5. In a railroad cattle-guard, the combination of a plurality of cross-ties, and a plurality of metallic guard-sections, each secured to a cross-tie and having inclined faces one provided with a lower fulcrum edge projecting from one side of the cross-tie between its top and bottom, and another provided with an upper resistance edge projecting above and beyond the opposite side of the cross-tie.

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Witnesses:

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