

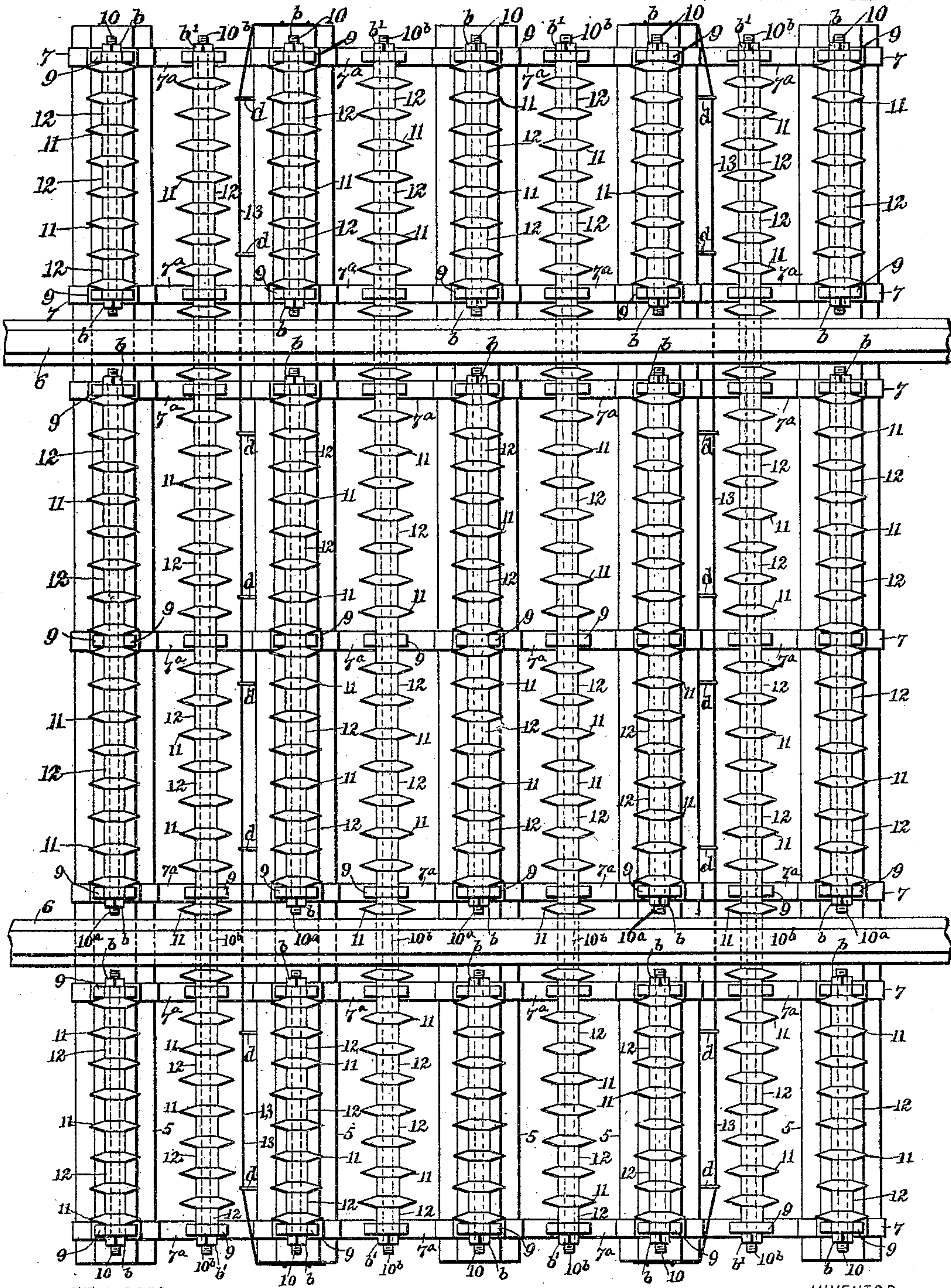
L. T. COX.  
CATTLE GUARD.

APPLICATION FILED AUG. 26, 1909.

Patented Apr. 26, 1910.

956,295.

2 SHEETS—SHEET 1.



WITNESSES

Edward Thorpe  
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Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 2,

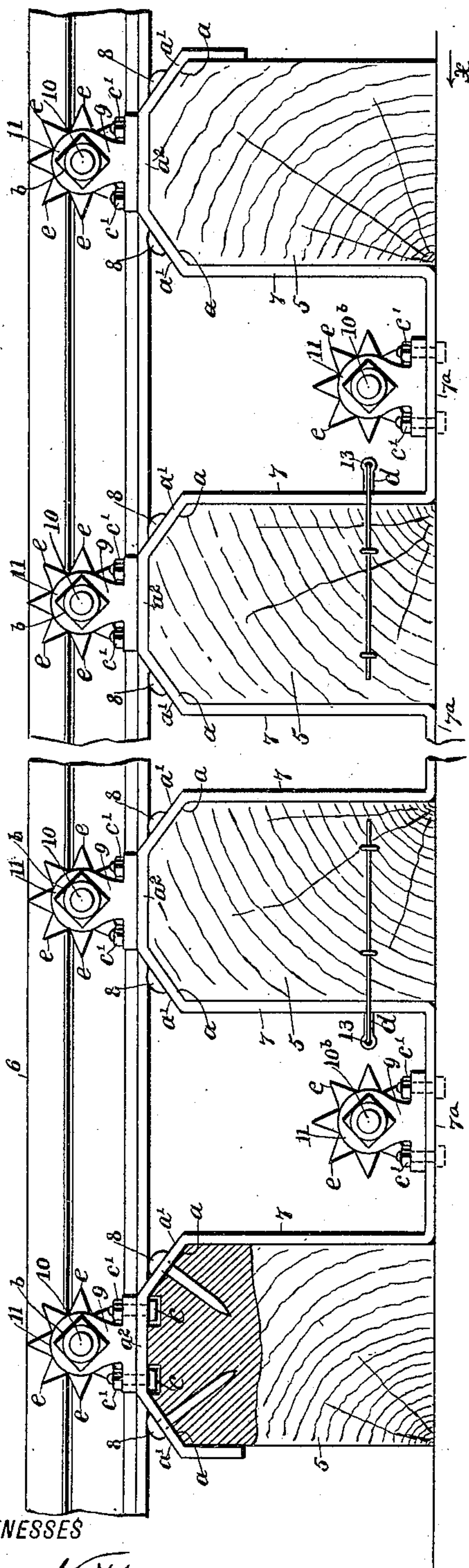


Fig. 3,

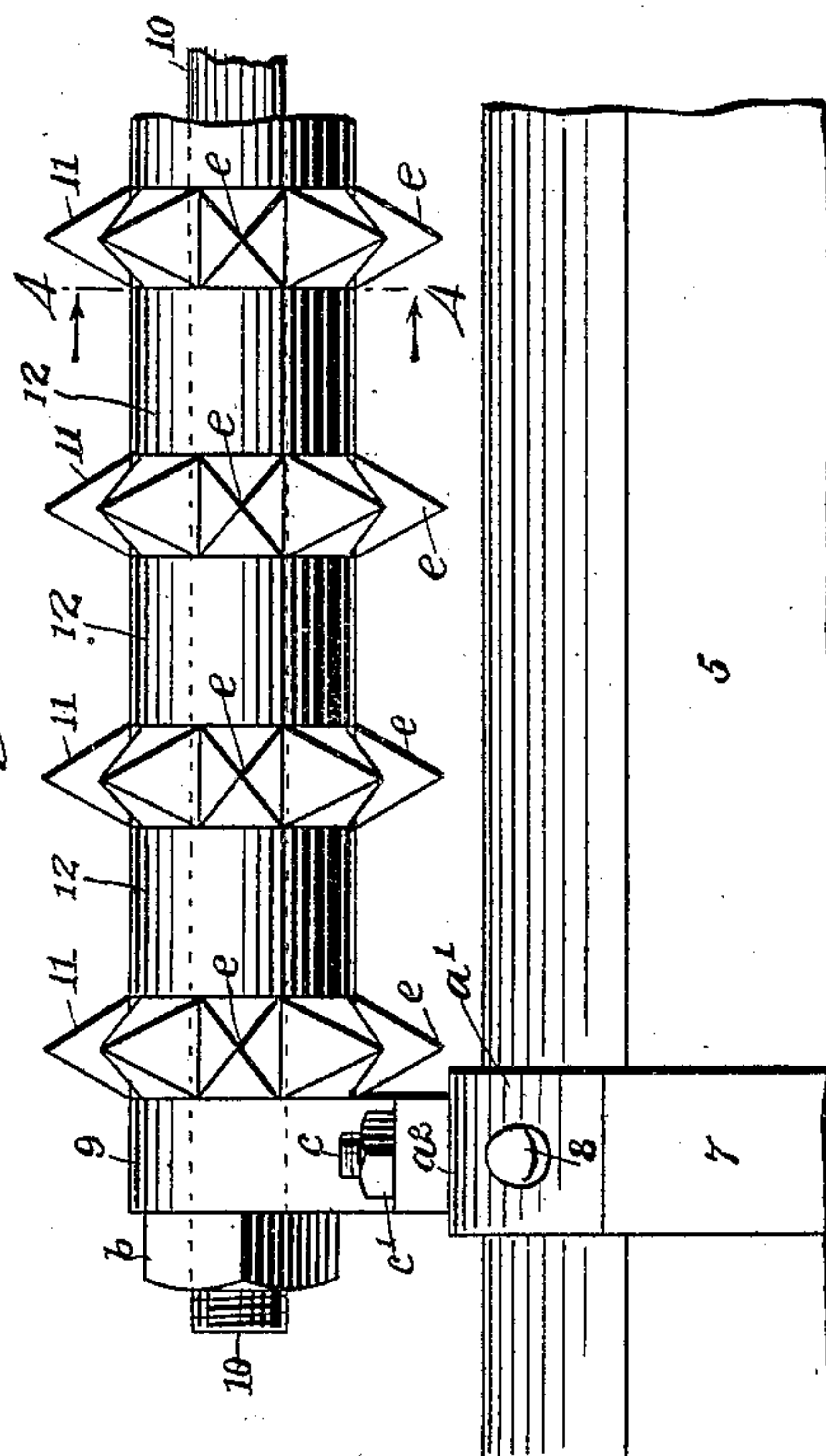
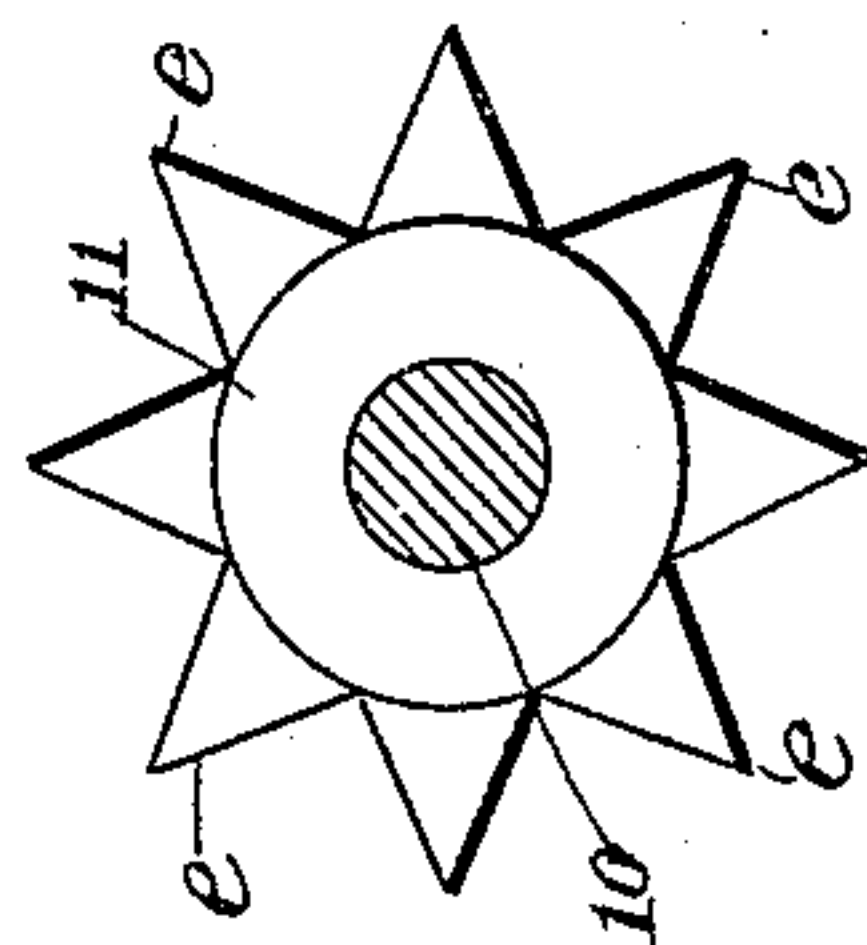


Fig. 4,



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# UNITED STATES PATENT OFFICE.

LEON THOMPSON COX, OF COLUMBIA, TENNESSEE.

## CATTLE-GUARD.

956,295.

Specification of Letters Patent.

Patented Apr. 26, 1910.

Application filed August 26, 1909. Serial No. 514,760.

*To all whom it may concern:*

Be it known that I, LEON THOMPSON COX, a citizen of the United States, and a resident of Columbia, in the county of Maury and State of Tennessee, have invented a new and Improved Cattle-Guard, of which the following is a full, clear, and exact description.

This invention relates to a type of cattle guards arranged on cross ties of a railroad, and having yielding obstructions mounted upon the ties, that hinder the free passage of cattle over the guard; and has for its object to provide novel details of construction for a cattle guard of the type indicated, that are simple, durable and effective in service, and greatly obstruct a traverse of the guard by live stock, without injury thereto.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and defined in the appended claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the improved cattle guard; Fig. 2 is an enlarged partly sectional side view of a portion of the improved cattle guard; Fig. 3 is an enlarged perspective view of a portion of the improved cattle guard, and Fig. 4 is a transverse partly sectional view, on the line 4-4 in Fig. 3.

The cattle guard is usually located at a road crossing, or other point of danger, such as a deep cut in the road bed, and for effective service the device should present such insecure footing for cattle or other animals, that they will after trial desist from attempting to traverse the same.

In the drawings 5 indicates the cross ties of a railroad arranged in usual spaced order, and forming the base supports for the improved cattle guard, and 6 represents two spaced track rails, secured transversely on the ties 5.

In the present construction of the improvements, five cross ties are employed, but it is to be understood that a greater number may be used if the situation requires such an increase, and as appears in Fig. 1, the ties extend an equal distance outside of the track rails sufficient for the proper support of details of the guard. As shown in

Fig. 2, the upper corner is removed from each cross tie 5, producing two beveled surfaces  $\alpha$  of an equal width, in lieu of said corners. Upon the cross ties 5, and between them, a plurality of similar base plates 7 are mounted and supported, said base plates, as indicated for one in Figs. 2 and 3, each consisting of a flat iron strap having proper width and thickness, and as appears in Fig. 2, each base plate 7 is bent to fit closely upon the top and sides of each cross tie and extends horizontally, as at  $7^a$ , between the ties. As shown in Fig. 1, the base plates 7 in the present construction, are seven in number, disposed as follows: Two base plates are mounted on the cross ties near opposite ends thereof, two near the outer edges of base flanges on the track rails, two near the inner edges of said track rails, and one base plate at the centers of the ties between the track rails. The angularly-bent portions of the base plates 7, that are mounted upon the top surfaces of the cross ties 5, have inclined members  $\alpha'$  that are seated upon the beveled surfaces  $\alpha$  and are thereto secured by spikes 8 which are driven through perforations in said inclined members  $\alpha'$  into the ties, as represented at the left in Fig. 2. Upon the flat members  $\alpha^2$  of the base plates 7, that space each pair of inclined members  $\alpha'$  apart, and that are seated upon corresponding flat surfaces on the cross ties 5, similar bracket stands 9 are seated and secured by bolts  $c$  and nuts  $c'$ .

The upper portions of the bracket stands 9 on each cross tie and base plate thereon, are laterally and oppositely bored, providing circular openings therein of an equal diameter. In each pair of bracket stands 9, that are positioned on a cross tie 5, outside of a respective track rail 6, a journal bolt 10 is inserted, the ends of each of said bolts that are threaded extending a distance through and beyond the respective stands, for the reception of nuts  $b$ , that are screwed thereon when the parts are assembled. Upon each journal bolt 10 a plurality of star wheels 11 are mounted, these similar wheels having radial pointed teeth  $e$  thereon, as best shown for one star wheel in Fig. 4. Between each pair of star wheels 11 a spacing sleeve 12 is mounted upon a respective journal bolt 10, as is clearly shown in Fig. 1, and the nuts  $b$  on the ends of the journal bolts are so adjusted that the star wheels will turn freely.



Upon the cross ties 5 and between the track rails 6, bracket stands, such as 9, are secured on the upper flat surfaces of the base plates 7, three of said stands being secured  
 5 on the spaced base plates that engage the tops and sides of each cross tie. The bores in the three bracket stands of each cross tie 5, between the track rails 6, are alined and receive a journal bolt 10<sup>a</sup>, that is projected  
 10 somewhat beyond the bracket stands near the track rails 6, is threaded on said end portions and receives nut *b*. Upon each of the journal bolts 10<sup>a</sup>, which extend between the track rails 6, a proper number of star  
 15 wheels 11 are loosely mounted and spaced apart by sleeves 12, said wheels and sleeves being held on the bolts by the nuts *b*.

Upon any preferred number of the cross ties 5, stay braces 13 are secured by means  
 20 of short arms *d*, that project laterally from the cross ties, the ends of said arms passing into the cross ties, while the ends of the braces lap upon the ends of the ties and are thereto secured, as indicated in Fig. 1. The  
 25 braces 13 are so disposed at their free ends that project toward the star wheels 11, that they serve to enforce an engagement of the feet of an animal with said wheels.

Upon the longitudinal portions 7<sup>a</sup> of the  
 30 brace plates 7, preferably at their center, bracket stands 9 are erected and secured so that the bores in each row of bracket stands are alined, and through each row of stands that are positioned between a pair of cross  
 35 ties 5, an elongated journal shaft or bolt 10<sup>b</sup> is inserted, said journal shafts each having threaded ends and nuts *b'* thereon. A plurality of star wheels 11 are mounted on each journal shaft 10<sup>b</sup>, and between each pair of  
 40 said wheels a spacing sleeve 12 is placed on the journal shaft, and the sleeves on said shafts 10<sup>b</sup> are so arranged with relation to the similar spacing sleeves on the shafts 10 and 10<sup>a</sup>, that the star wheels on the shafts  
 45 10<sup>b</sup> will be disposed in planes between those on the shafts 10, 10<sup>a</sup>, as shown in Fig. 1. Preferably the star wheels on the journal bolts 10, 10<sup>a</sup> are so disposed that their pointed peripheries lie in or near the plane defining  
 50 the tread surfaces of the track rails 6.

Assuming that the improvement is located at a suitable point for effective service, it will be noted that cattle approaching the same in either direction between the  
 55 track rails 6, or at either side thereof, will encounter the rotatable star wheels 11, which, by their rotary movement, will cause the animal to stumble and probably fall before the guard has been traversed.

60 The insecure footing and slight wounds inflicted on the legs of cattle attempting to

cross the guard, by contact of their legs with the pointed teeth on the star wheels 11, will alarm the beast and cause it to retreat and leave the track, thus obviating danger to  
 65 rolling stock if an animal is struck on the track at a danger point.

Having thus described my invention, I claim as new and desire to secure by Letters  
 Patent:

1. The combination with cross ties, and track rails thereon, of base plates embracing the sides and top surfaces of the cross ties, and star wheels rotatably supported  
 75 from the base plates.

2. The combination with cross ties, and track rails thereon, of a plurality of base plates embracing the sides and top surfaces of the cross ties and extending between said ties, journal bolts supported from the base-  
 80 plates, and star wheels rotatably mounted upon the journal bolts.

3. The combination with cross ties, and track rails thereon, of a plurality of base plates embracing the sides and top surfaces  
 85 of the cross ties and extended between said ties, bracket stands mounted upon the base plates over the ties, journal bolts supported by the bracket stands, star wheels rotatable on said bolts, and spacing sleeves on said  
 90 bolts between the star wheels.

4. The combination with cross ties, and track rails thereon, of a plurality of base plates embracing the sides and top surfaces of the ties and extended between adjacent  
 95 ties, bracket stands mounted on the base plates above the ties and between adjacent ties, journal bolts and shafts engaging the bracket stands, star wheels on said bolts and shafts, and spacing sleeves disposed on the  
 100 bolts and shafts between the star wheels.

5. The combination with cross ties having their upper corners removed and beveled surfaces formed thereat, of a plurality of base plates bent so as to bear laterally on  
 105 each cross tie and seat upon the top surfaces thereof, said base plates extending between adjacent ties, spikes securing the base plates on the beveled surfaces of the ties, bracket stands secured on the top surfaces of the base  
 110 plates and also between the ties, journal bolts carried by the bracket stands, star wheels on said bolts, and spacing sleeves on said bolts between the star wheels.

In testimony whereof I have signed my  
 115 name to this specification in the presence of two subscribing witnesses.

LEON THOMPSON COX.

Witnesses:

T. ED. NEW,  
 FRANK H. SMITH.