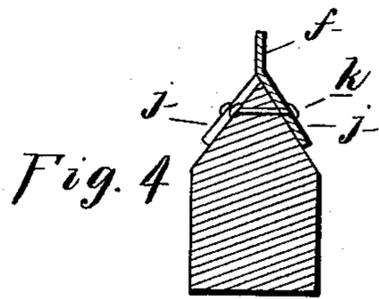
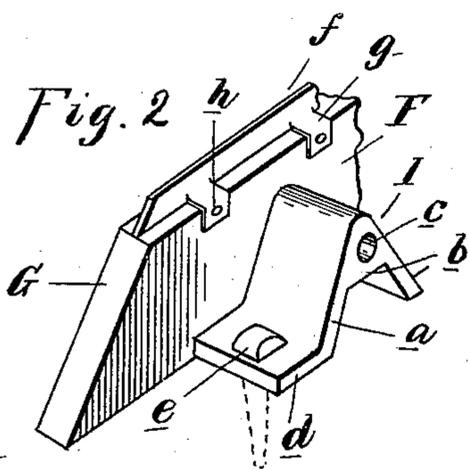
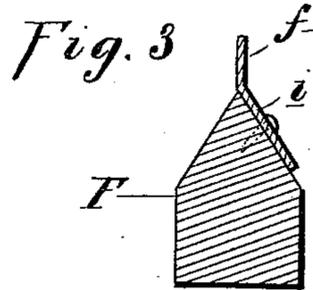
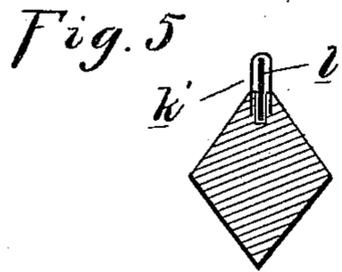
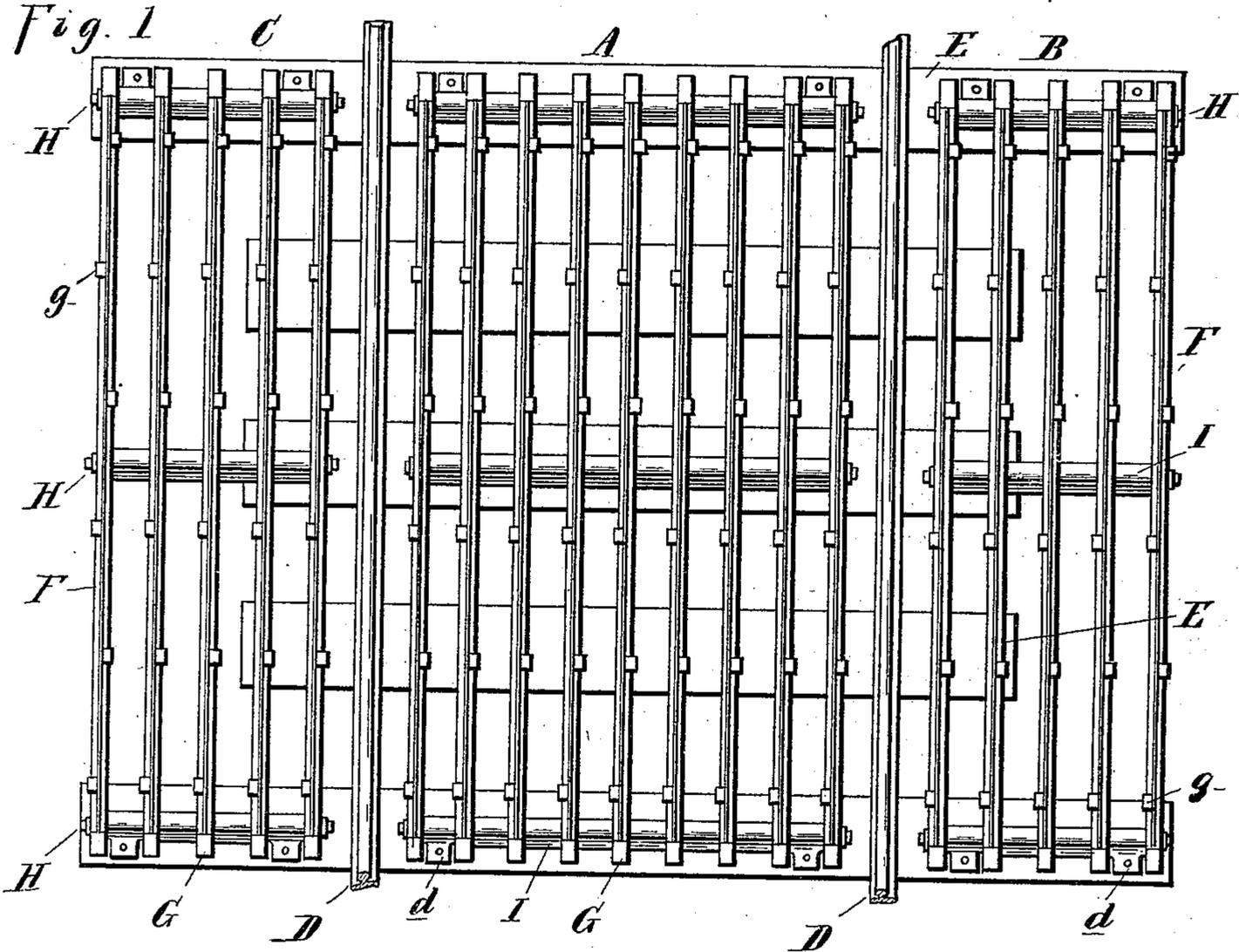


(No Model.)

J. T. HALL.  
RAILWAY CATTLE GUARD.

No. 446,228.

Patented Feb. 10, 1891.



Witnesses:  
*P. M. Hulbert*  
*W. B. Dogherty*

Inventor:  
 James T. Hall  
 By *W. H. Proquest*  
 Atty.

# UNITED STATES PATENT OFFICE.

JAMES T. HALL, OF CHICAGO, ILLINOIS.

## RAILWAY CATTLE-GUARD.

SPECIFICATION forming part of Letters Patent No. 446,228, dated February 10, 1891.

Application filed May 29, 1890. Serial No. 353,660. (No model.)

To all whom it may concern:

Be it known that I, JAMES T. HALL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Railway Cattle-Guards, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in railway surface cattle-guards; and the invention consists in the peculiar construction of the grating designed to be laid upon the track, whereby an economical and efficient guard is produced, all as more fully hereinafter described.

In the drawings which accompany this specification, Figure 1 is a plan view of my improved cattle-guard. Fig. 2 is a detail perspective view of the end of one of the said rails, showing the construction of the spacing-thimbles. Figs. 3 and 4 are vertical cross-sections through the guard-rails, showing a modified form of my construction. Fig. 5 is a cross-section through another modification specifically referred to.

In the present state of the art surface cattle-guards have been made of metal gratings of various constructions placed upon the track at road-crossings. These gratings have usually consisted of metal bars variously arranged to give an insecure footing to animals attempting to cross such cattle-guards. These gratings have proven to be effective, but have also proven to be expensive as compared with the old style of wooden cattle-guards arranged over a culvert.

In order to produce a cattle-guard which will be at once effective and economical, I have devised the guard herein described and shown.

A B C are three gratings placed upon the track between and outside the rails D and secured upon the ties E. These gratings are constructed as follows: F are wooden guard-rails having beveled ends G and secured together by means of the connecting-bars H. These guard-rails are supported by placing between them upon the rod H the thimbles I. These thimbles consist of inverted-V-shaped castings *a*, each having a web *b* formed inte-

gral therewith and an aperture *c* formed therein, through which the rods H pass. At the corner of the grating I place such a spacing-thimble as above described, and in addition I form on the inverted-V-shaped casting the foot *d*, which is designed to rest upon the top of the tie and is suitably apertured to receive the spike *e*, by means of which the grating is secured in position upon the track. Upon the top of each of these guard-rails I secure a flange *f*, preferably of metal. This flange I secure to the guard-rail in any suitable manner. In Fig. 2 I have shown it provided with the downwardly-projecting ears *g*, and by means of the bolts *h*, passing there-through and through the guard-rail, the strip is held firmly in position. In Fig. 3 I have shown the flange *f* formed with the downwardly-projecting flange *i*, by means of which the flange may be spiked or bolted to the guard-rail, which in this case is formed with an inverted-V-shaped top, which is the usual shape used at the present time in making wooden cattle-guards. In Fig. 4 I have shown the flange *f* applied to such a guard-rail and secured thereon by the outwardly-extended flanges *j*, one upon each side of the strip and secured in position by the cross-bolts *k*.

In Fig. 5 I show the guard-rail provided with a saw-kerf at the top, in which the metal strip *l* is secured in position by the staple *k'*. This peculiar form of construction I have claimed in my concurrently-pending application, Serial No. 253,475, filed on October 26, 1887, and patented October 7, 1890, as No. 437,757.

It will be seen that each wooden guard-rail forms a support for the entire length of its flange *f*. This enables me to use a small strip of metal, as all the strain brought upon the guard by cattle walking upon it is taken up. The metal strip simply serves to give a sharp upward presentation, which most effectually destroys the footing of the animal. If simply wooden strips are used with sharp edges, decay and breakage soon render them ineffectual.

It is evident that my flange *f* can be applied to cattle-guards already in the track at small expense, thus making cattle-guards effectual which are now of little or no use.

Sufficient flexibility may be had in the wooden guard-rails to give vibration to the grating, if required, to add to the insecurity of the footing.

5 I believe I am the first to construct a cattle-guard of wooden guard-rails forming a base, combined with a metallic strip secured at the top thereof.

What I claim as my invention is—

10 1. In a surface cattle-guard, the gratings formed of guard-rails having a base and an upwardly-extending metallic flange of a separate piece, substantially as described.

15 2. In a railway surface cattle-guard, gratings formed of wooden guard-rails, each having an upwardly-extending metallic flange supported its entire length upon said guard-rail, substantially as described.

20 3. In a railway surface cattle-guard, gratings formed of guard-rails, each having an upwardly-extending metallic flange secured

in position by means of flanges, such as *g*, and bolts *h*, substantially as described.

4. In a railway surface cattle-guard, the thimble *I*, having apertured foot *d*, said foot 25 forming means for securing the guard-sections in the track, substantially as described.

5. In a railway surface cattle-guard, the thimble *I*, having web *b*, aperture *c*, and foot *d*, apertured to receive a spike, substantially 30 as described.

6. In a surface cattle-guard, the gratings formed of wooden guard-rails, combined with a metallic guard-strip secured on the top 35 thereof, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 15th day of May, 1890.

JAMES T. HALL.

Witnesses:

WM. ROWLEY,  
LE ROY BEARDSLEY.