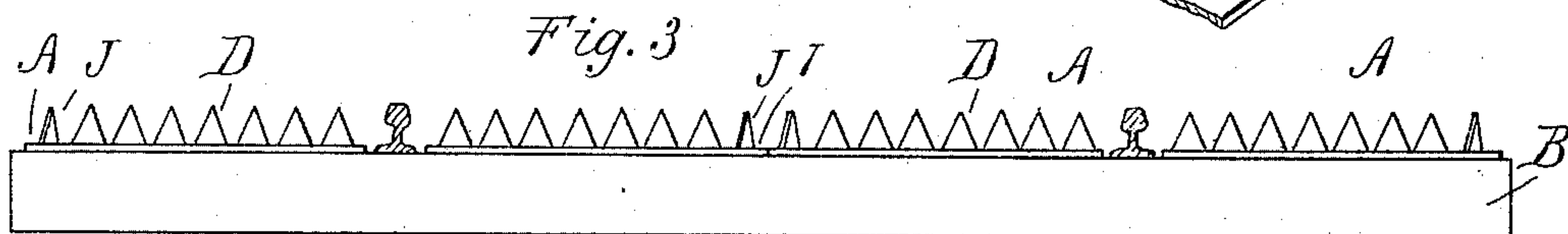
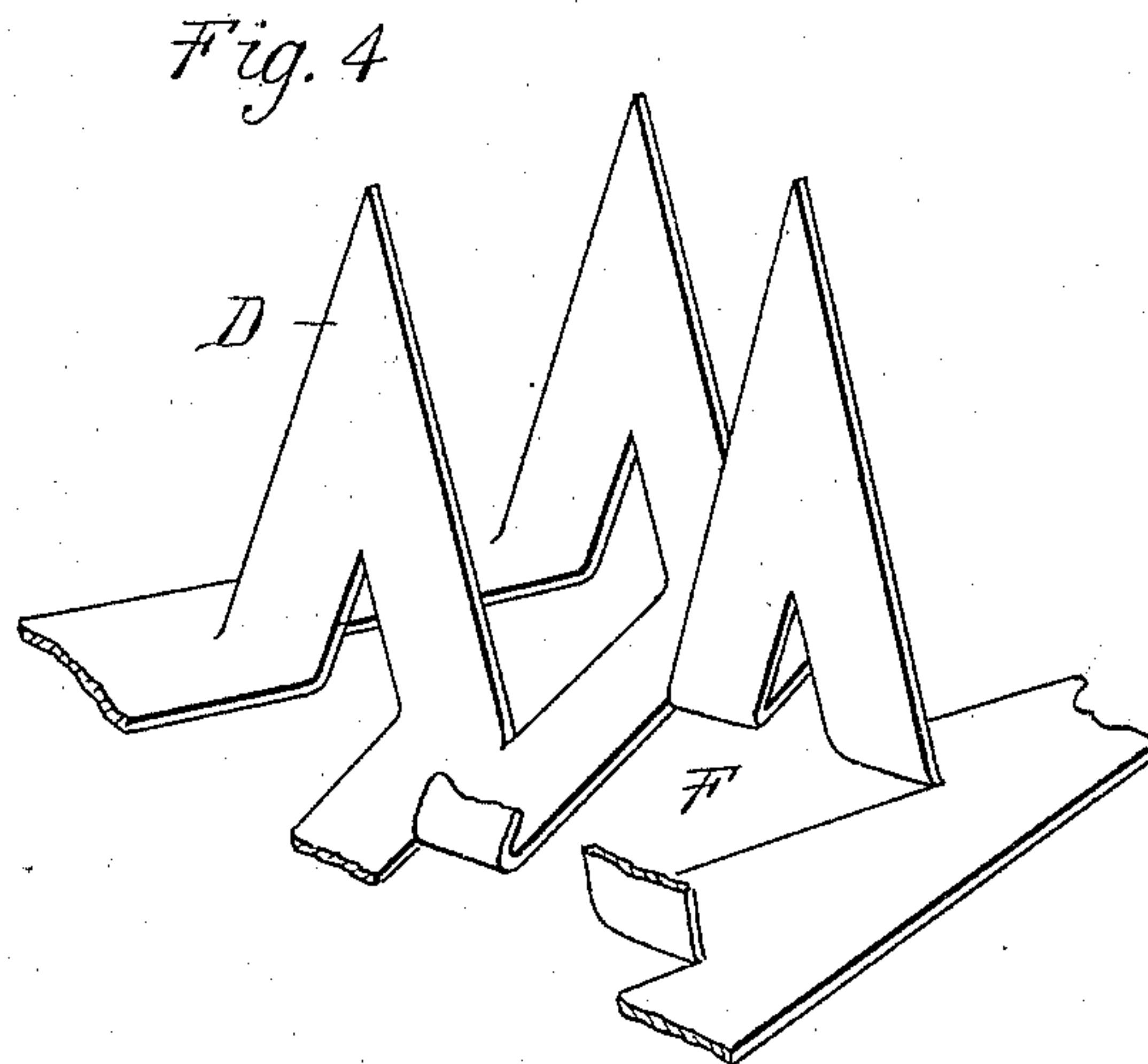
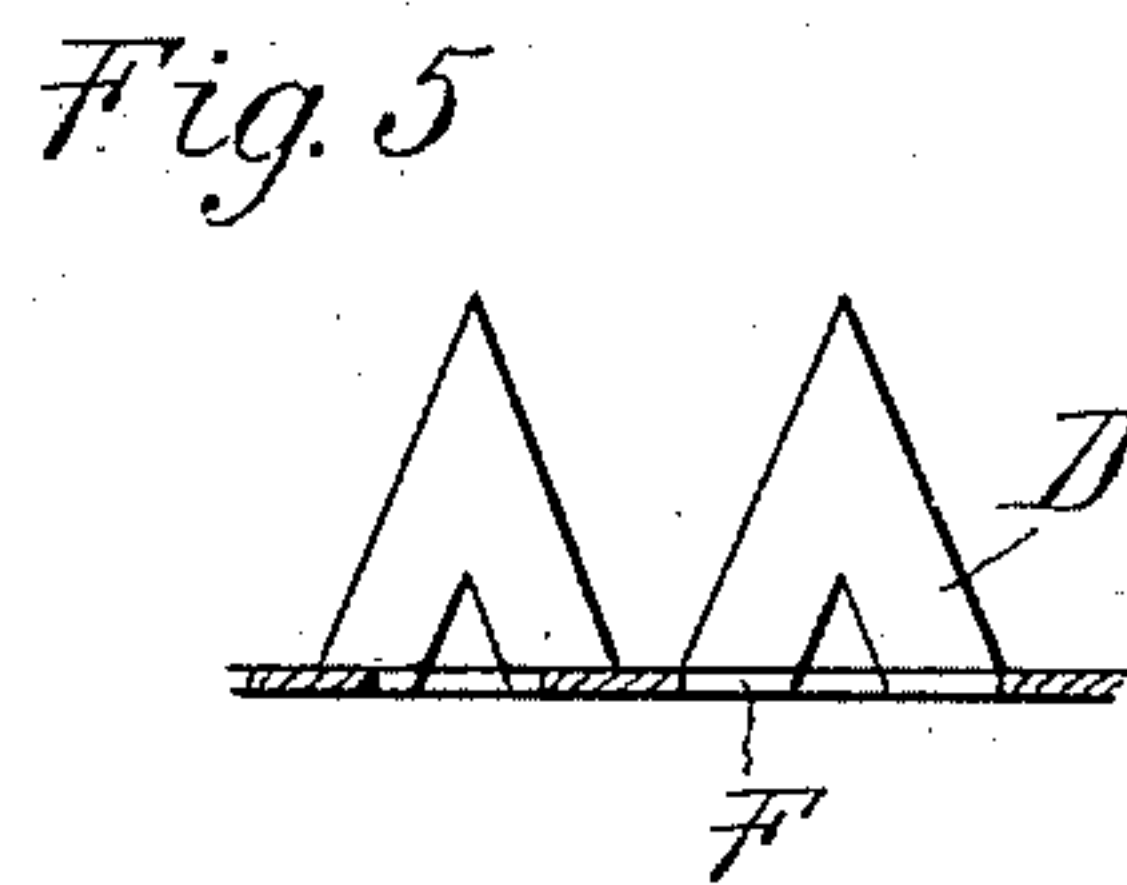
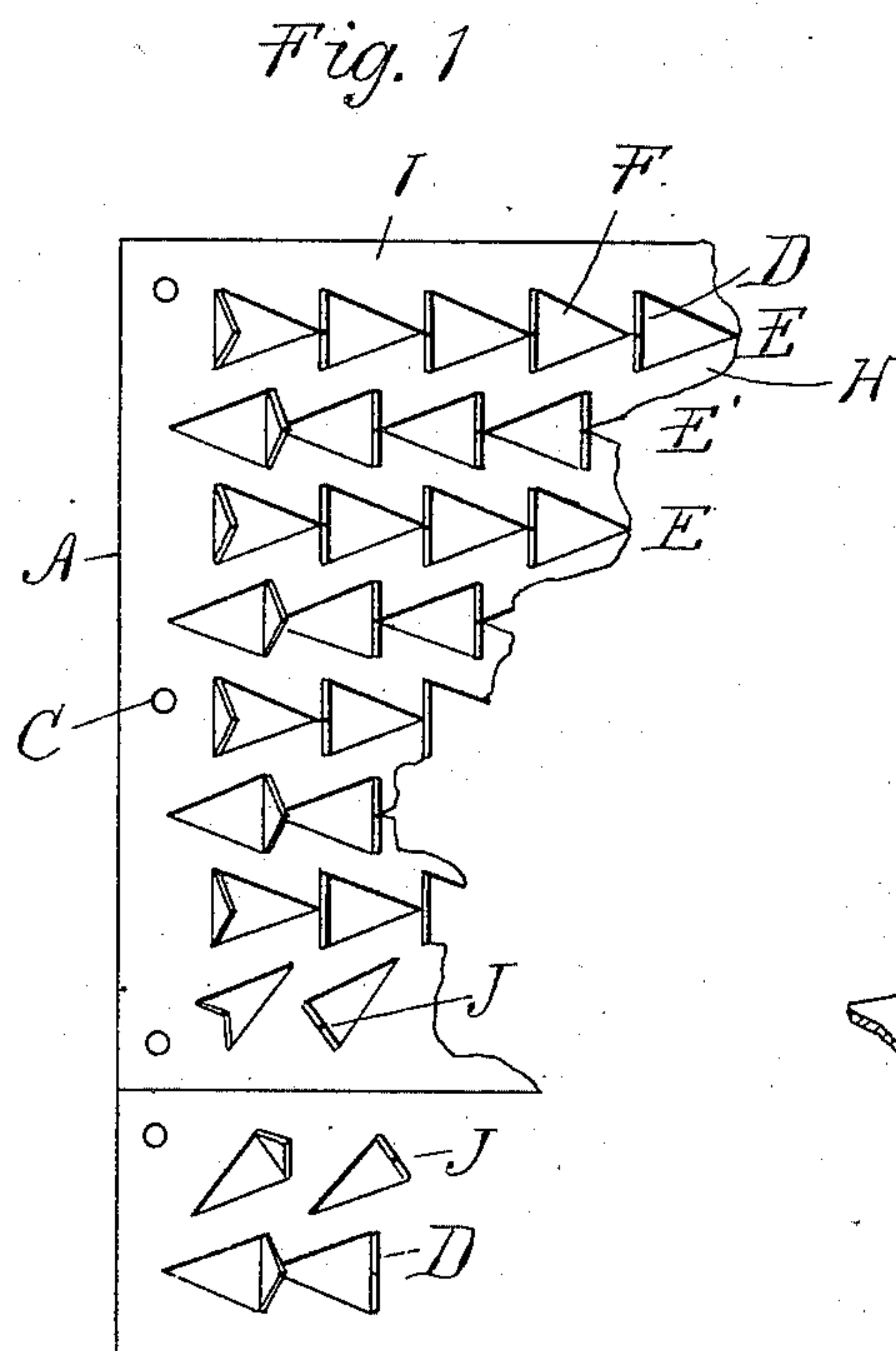
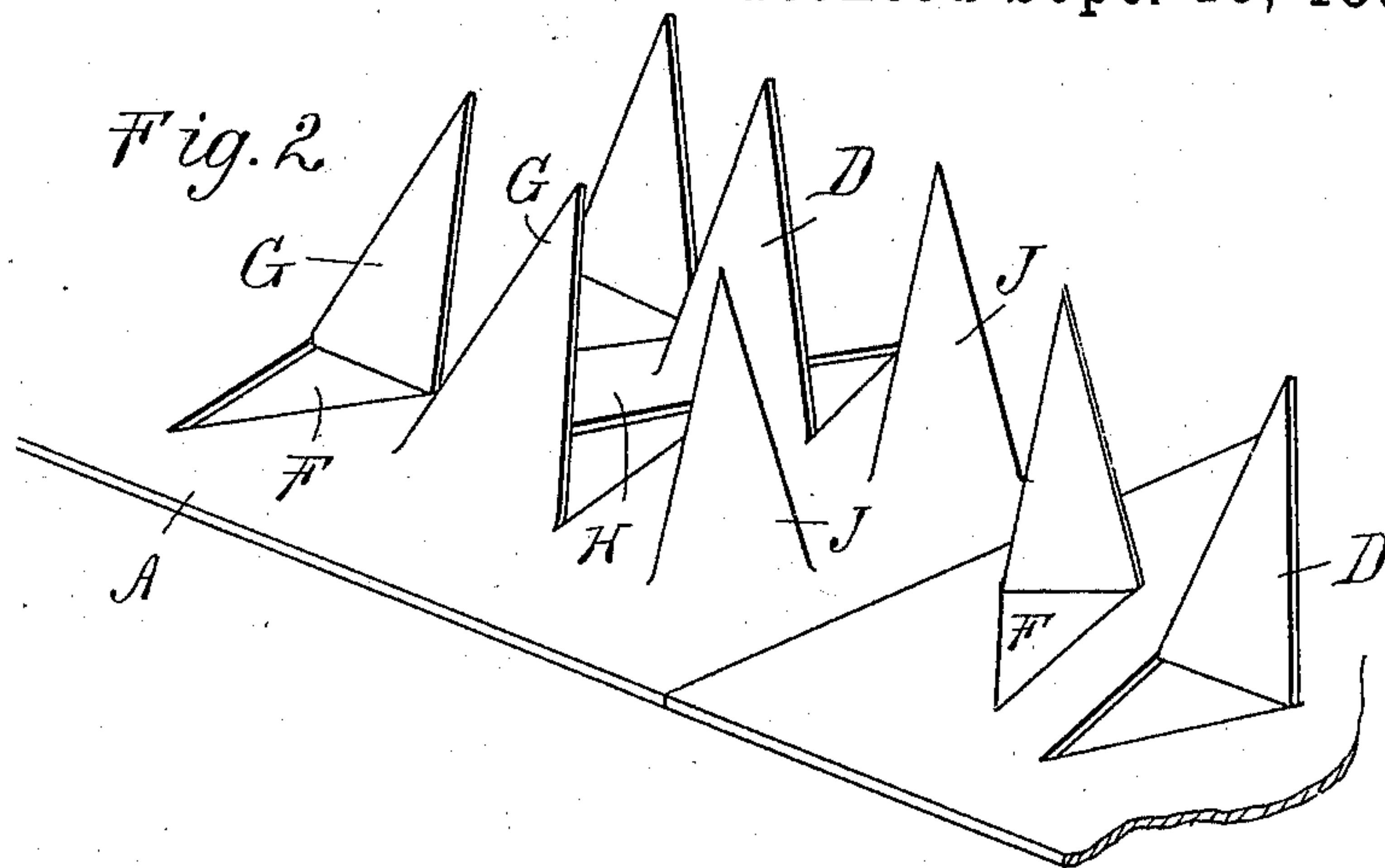


(No Model.)

F. G. SUSEMIHL.
CATTLE GUARD.

No. 567,844.

Patented Sept. 15, 1896.



Witnesses:
P. M. Hulbert
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UNITED STATES PATENT OFFICE.

FRANCIS G. SUSEMIHL, OF DETROIT, MICHIGAN, ASSIGNOR TO THE
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CATTLE-GUARD.

SPECIFICATION forming part of Letters Patent No. 567,844, dated September 15, 1896.

Application filed August 7, 1895. Serial No. 558,507. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS G. SUSEMIHL, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Cattle-Guards, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The invention consists in the construction of a railway surface cattle-guard made of sheet metal, the footing-destroying element being produced by teeth struck up from the sheet.

15 The invention in particular consists in the peculiar structure or arrangement of teeth in relation to the web, whereby the teeth may be brought sufficiently close together to present a practically impassable barrier for cattle and at the same time present a safe footing for persons who may have to cross the guard.

20 The invention further consists in the construction and arrangement of the teeth in each guard-section so that there are no gaps free from teeth beside the rails or between the meeting edges of the sections where cattle can walk.

25 The invention further consists in the construction, arrangement, and combination of the various parts, all as more fully hereinafter described.

30 In the drawings, Figure 1 is a plan view of a portion of two of my improved guard-sections as in the track. Fig. 2 is a perspective view thereof. Fig. 3 is an end elevation of the guard as in the track. Fig. 4 is a sectional perspective view of a slightly-modified form, and Fig. 5 is a cross-section thereof.

35 In the prior state of the art cattle and other flat guards have been constructed from sheet metal by striking teeth out of a blank to present a series of upwardly-projecting fins or points to form the footing-destroying element of the guard. Such guards have proven unsatisfactory for two reasons—first, because 45 they have not produced a sufficiently insecure footing to prevent animals from crossing, and, second, because they produced a guard in which the points were so far apart as to destroy the footing for persons. In other words, 50 the points were so arranged as to permit the

feet of animals to find footing between them, and yet such a distance apart as not to permit the foot of a person to bear upon a series of such points to give a proper footing. 55

My guard embodies a construction in which the teeth are so constructed and arranged that at no point can an animal find a secure or flat footing, and yet the points are so combined that a person having a shoe of ordinary 60 proportions can walk with impunity across the guard with firm footing.

My cattle-guard I form in four or more like sections A, two such sections fitting between the rails and filling that space and one section outside the rails on each side. These 65 sections lie directly upon the ties B and may be secured by spikes driven through the apertures C. The teeth D are arranged in rows. The adjoining rows are oppositely struck up, 70 that is, the points of the teeth of one row E are struck up from the left and those of the adjoining row E' are struck up with the points to the right. I shall refer to this as "oppositely-arranged" teeth in succeeding rows. 75 The teeth of one row, when struck up, stand intermediate the apertures F, formed by striking up the teeth of the adjoining rows, the effect being to form a staggered arrangement of the teeth on the plate. 80

The teeth, except those at each end, are struck up to stand vertically. The end teeth G are bent to incline inwardly, so that persons walking up to the guard, striking their feet against these inclined teeth, will not be 85 apt to stumble and fall upon the guard, as they would if these teeth were vertical.

The teeth of each row are struck up so as to make practically a continuous aperture, or, in other words, to divide the plate into 90 narrow web-sections H between the rows. This is accomplished by striking up the teeth so that the point or apex of one tooth is struck up from the base, or from a point in the base of the succeeding tooth, whereby these web-sections H are connected only by the teeth. 95

By forming the teeth as shown in Figs. 4 and 5, one tooth overlapping with its point the base of the adjoining tooth, I can space them still nearer together than with the formation shown in Fig. 1. 100

Where the pointed teeth are thus struck

up in rows, it leaves at the side the notched plate or web-section I, and in the case of the two middle guard-sections this space would leave room for an animal to walk at their meeting edges. To best utilize this space and bring the edge teeth of the adjoining sections in the middle substantially the same distance apart as the other teeth, I strike up the narrow teeth J at an angle to the line of the adjoining teeth, the sides of the apertures formed by striking up these teeth being parallel to the apertures formed by striking up the other teeth. This utilizes the section I to the best advantage and produces the staggered arrangement of the side teeth, as well as the other advantages above pointed out.

A cattle-guard manufactured of plate or sheet iron or steel, with a footing-destroying element formed by teeth arranged as described, presents points of the desired height so closely interspersed that no animal can find a flat footing at any point, while the shoe of a man will span a series of the points and give him a firm footing at all points.

Each section being made in a single piece laid flat upon and spiked to the ties, there is no possibility of rattling as trains pass over,

and being formed without side flanges or margins the plate at all points is rigidly supported, and no place is afforded for dangling chains or rods to find a hold.

What I claim as my invention is—

1. A cattle-guard section formed of a sheet of metal comprising longitudinal web-sections, and teeth struck up in staggered transverse rows forming the sole connection between such web-sections.

2. In a cattle-guard section formed of sheet metal, the combination of pointed teeth struck up from the plate in rows, the apex of one tooth being struck centrally from the metal of the base of the next adjoining tooth, the teeth in the adjoining rows being oppositely arranged, and grouped so that the teeth of one row stand intermediate the apertures formed by striking up the teeth of the adjoining row, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANCIS G. SUSEMIHL.

Witnesses:

M. B. O'DOHERTY,
P. M. HULBERT.