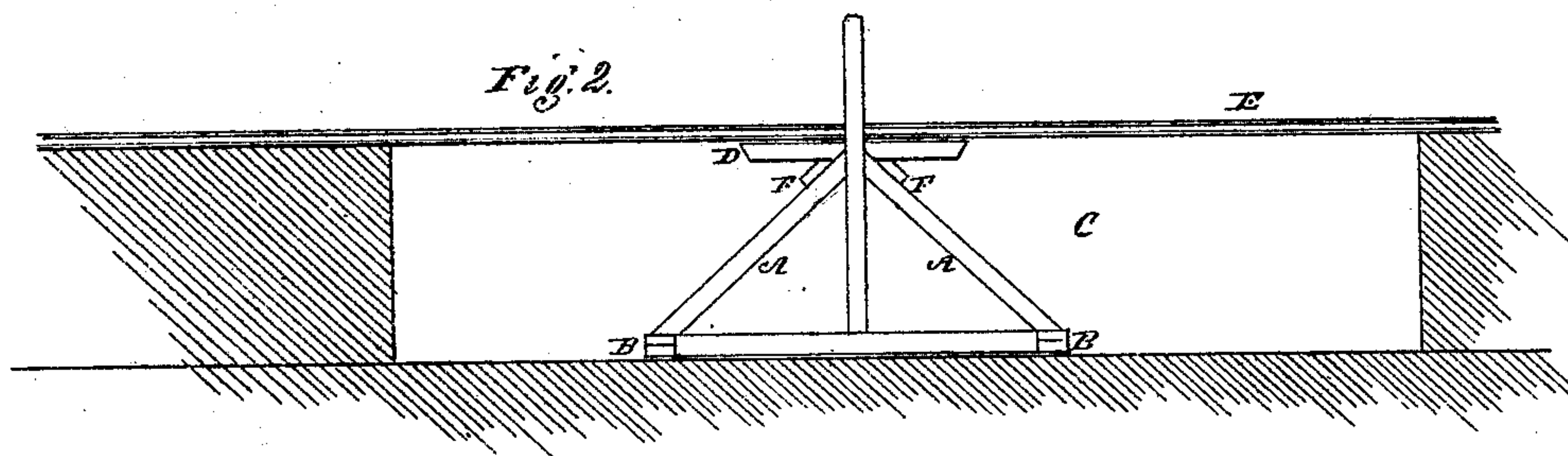
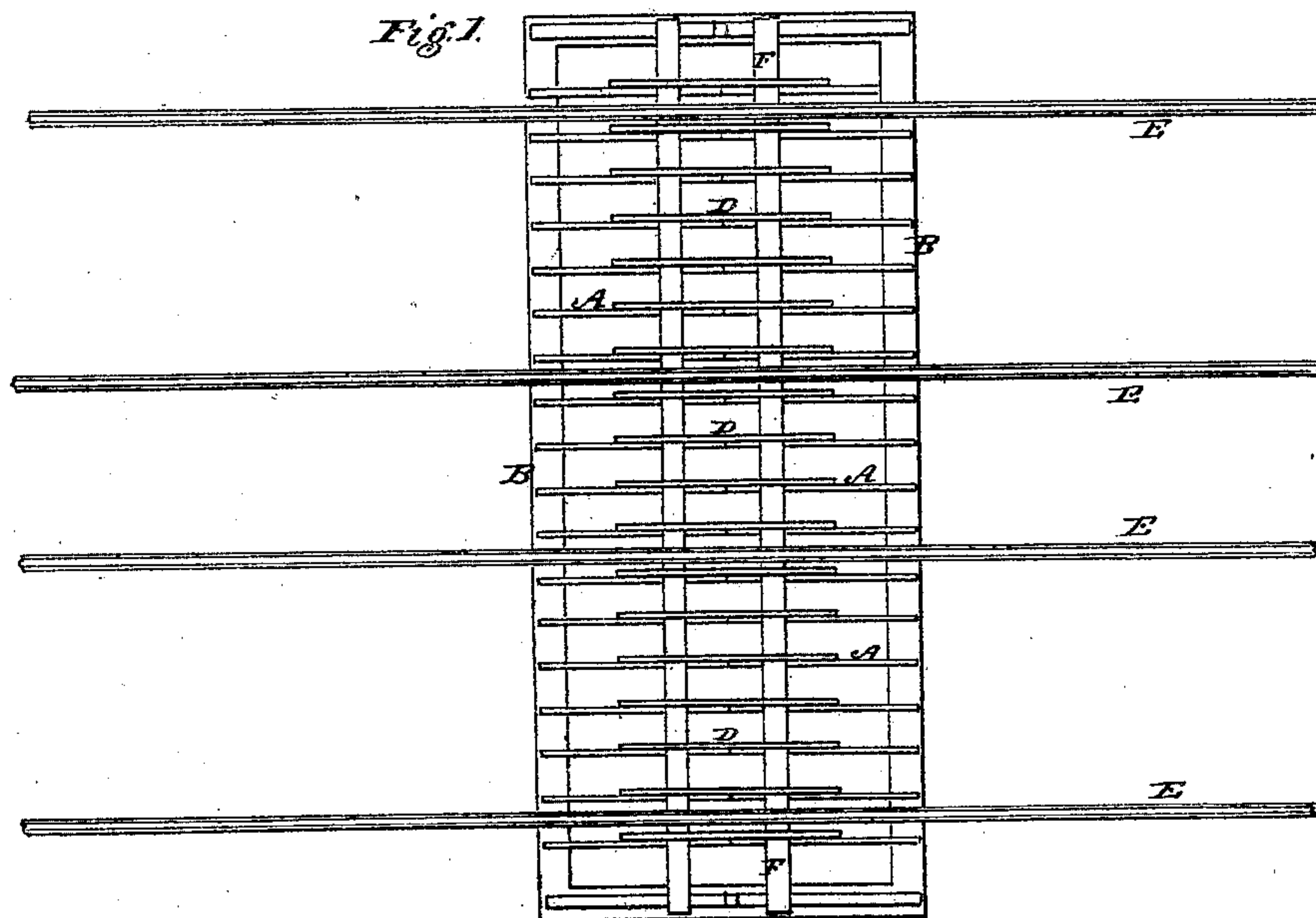


William Darrah & Jacob Cutshall.
Imp^d Cattle Guard for Railways.

No. 121,709.

Patented Dec. 12, 1871.



Witnesses.
J. Irvine
J. B. Beach

Inventors.
William Darrah
Jacob Cutshall

UNITED STATES PATENT OFFICE.

WILLIAM DARRAH AND JACOB CUTSHALL, OF COSHOCTON, OHIO.

IMPROVEMENT IN CATTLE-GUARDS FOR RAILWAYS.

Specification forming part of Letters Patent No. 121,709, dated December 12, 1871.

To all whom it may concern:

Be it known that we, WILLIAM DARRAH and JACOB CUTSHALL, both of Coshocton, in the county of Coshocton and State of Ohio, have invented a new and Improved Cattle-Guard for Railways; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing forming a part of this specification and to the letters of reference marked thereon.

The object of this invention is to provide a cattle-guard for railway-crossings, constructed in such a manner that it will effectually prevent cattle from straying onto the railway track, and which may be built and applied at little cost. The nature of this invention consists in a novel and peculiar arrangement of a series of horizontal bars in combination with a series of rafters or inclined supports and a railway track, the said bars being secured at or near the top of the said rafters, which latter are placed at any suitable angle of inclination and rest upon and are secured to a rectangular plate or frame; all being located in a suitable excavation under and across the track. The horizontal bars above mentioned are parallel with the rails, and are placed on a level with the under side of the rails, or on a level with the upper surface of the ties or of the ballast, so as not to interfere with any portion of the engine or cars.

To enable others skilled in the art to make and use our invention, we will proceed more particularly to describe the same.

Figure 1 represents a plan view of our improved cattle-guard. Fig. 2 is an end elevation of the same.

Letters of like name and kind indicate like parts in each of the figures.

A A A represent the rafters, which may be made of suitable material and dimensions, and placed at any convenient distance apart. The

lower ends of these rafters rest upon and are secured to the plates B B, which are located at the bottom of an excavation, C, made transversely across the road-bed. At the angle or peak of the rafters A, and secured to the same, are horizontal bars D D of suitable length, the upper surfaces of which are on a level with the under side of the rails or with the upper surface of the ties or ballast, and which are placed in a position parallel with the rails E. These bars D D are supported and kept in position by means of cross-bars F, upon which they rest, and which serve to strengthen the structure. The excavation may be of any convenient depth, and the rafters may be placed at any convenient angle of inclination, so that the upper surfaces of the horizontal bars shall be on a level or nearly on a level with the under side of the rails; and it will be seen that our invention can be readily and easily applied on all railways where the ordinary flat cattle-guard is now in use, as the depth of the excavation and angle of the rafters do not materially affect its operation; and we may also state that one of the horizontal bars D may be secured either to each pair of rafters or to each alternate pair, and in either case will present a surface upon which cattle will not and cannot step.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent of the United States, is—

The arrangement of a series of horizontal bars, D D D, in combination with a series of rafters, A A A, and a railway track, substantially as herein shown and described, and for the purposes set forth.

WILLIAM DARRAH.
JACOB CUTSHALL.

Witnesses:

D. C. BEACH,
J. IRVINE.

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