

(No Model.)

W. KENT.

TRUSS FOR TORSION BALANCES AND THE LIKE.

No. 396,497.

Patented Jan. 22, 1889.

Fig. 1.

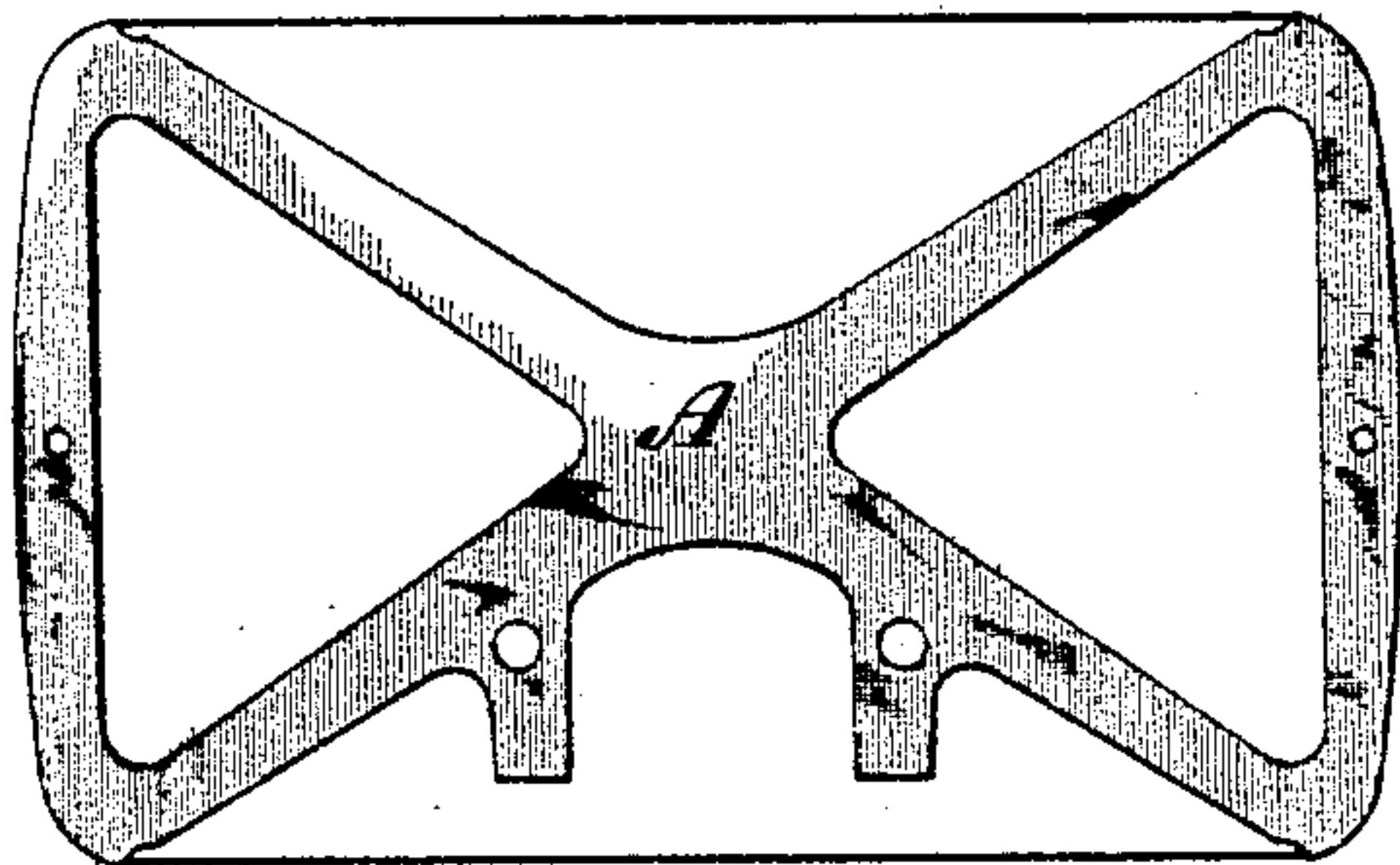


Fig. 2.

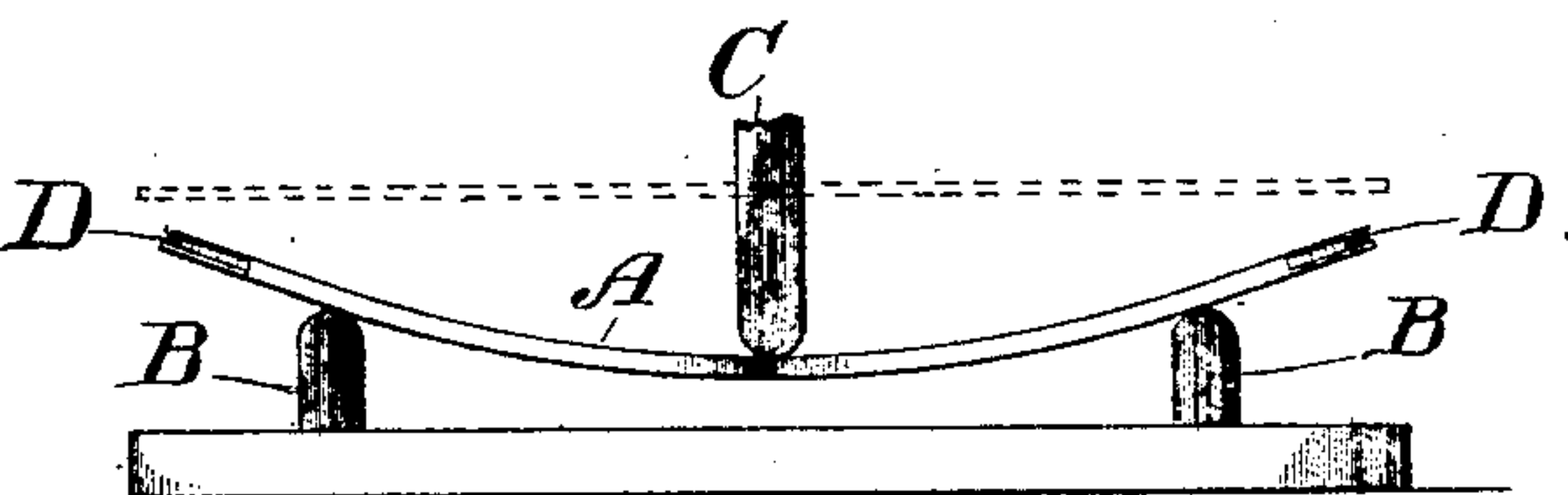


Fig. 3.



Fig. 4.

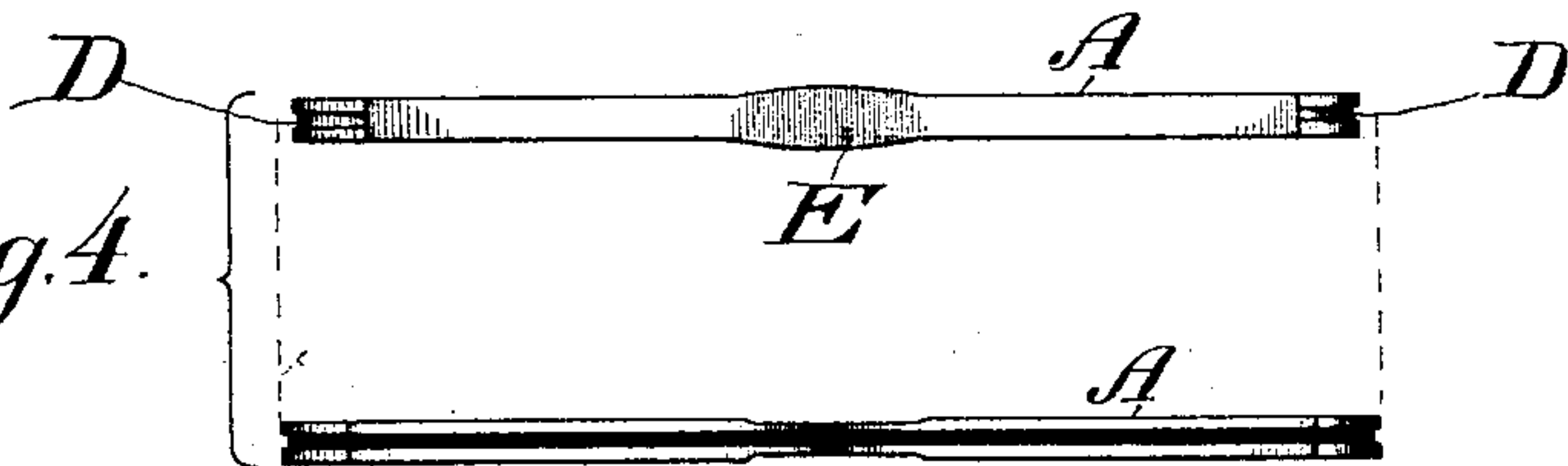
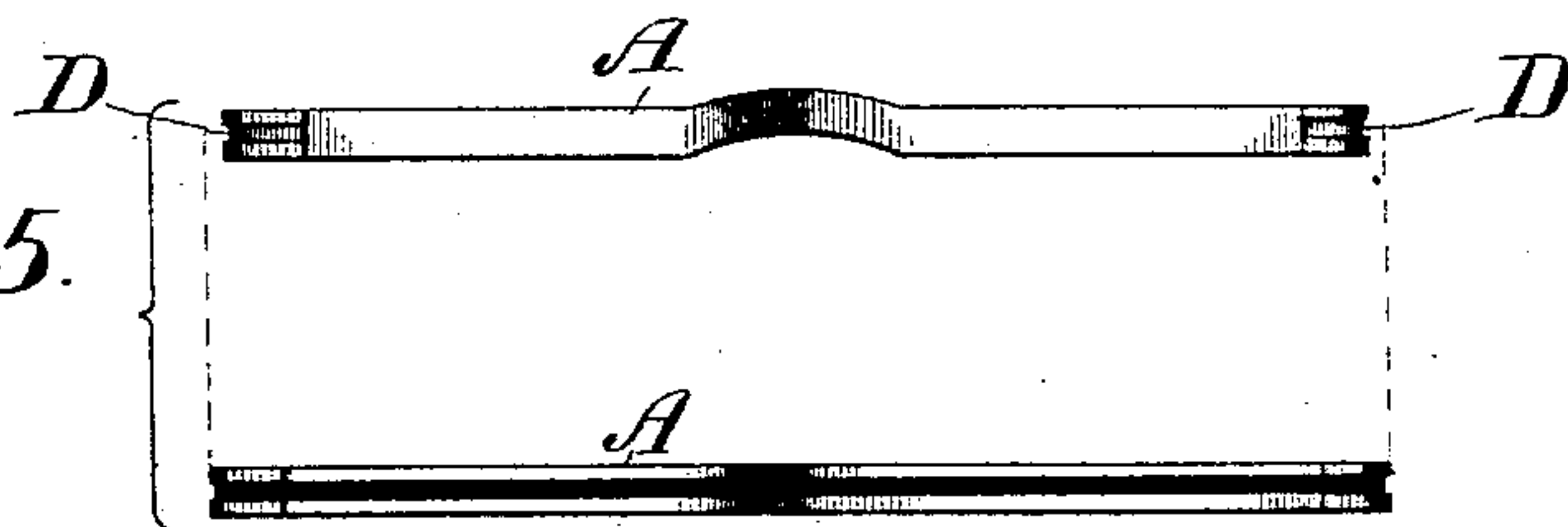


Fig. 5.



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UNITED STATES PATENT OFFICE.

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TRUSS FOR TORSION-BALANCES AND THE LIKE.

SPECIFICATION forming part of Letters Patent No. 396,497, dated January 22, 1889.

Application filed June 4, 1888. Serial No. 275,989. (No model.) Patented in England April 13, 1886, No. 5,134.

To all whom it may concern:

Be it known that I, WILLIAM KENT, a citizen of the United States, residing at Passaic, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Trusses for Torsion-Balances and the like, (which improvements were patented by me in England on the 13th day of April, 1886, and numbered 5,134;) and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to weighing-balances, having more particular reference to that class of such balances in which stretched wires, bands, or strips of elastic material—such as metal—are employed for use as pivots or pivotal bearings for the scale-beam or its connections; but specifically my invention has reference to the construction of the frame or truss around which the wire is stretched.

The object of my invention is to give greater lightness and rigidity to the truss, combined with exceeding cheapness and facility of construction, and at the same time to insure nicety in the adjustment of the tension of the wires.

With these ends in view my invention consists in the several features of improvement hereinafter fully described, and specifically designated by the claim.

Referring to the accompanying drawings, Figure 1 is an elevation showing my improved truss with the wire stretched thereon in accordance with my improved manner; Fig. 2, a side elevation illustrating the approved manner of securing the wire around a light sheet-metal truss; Fig. 3, an edge elevation of such a truss with the wire secured in proper position thereon. Fig. 4 shows one form of a malleable-metal truss before and after the wire is secured thereon; and Fig. 5, a view similar to Fig. 4, but showing a slightly different way of securing the wire around the truss.

The same letters denote the same or like parts in the several figures.

In weighing-scales of this description it is necessary that the wire which constitutes the

torsional pivot should be held to a certain degree of tension, and heretofore this has been accomplished by making the truss in sections and forcing the latter apart and against the wire by means of wedges or screws. While a truss so made answered the purpose intended, its construction, especially in the larger sizes, was deemed to be too bulky, and the cost of making such a truss, and of assembling the parts thereof in connection with the wire, was very great.

My invention contemplates the making of the truss in a single piece, and the stretching of the wire thereon simultaneously with the final operation in the formation of said truss.

In scales for weighing comparatively light materials the truss is made from sheet metal which has a resilient action if bent out of its normal shape, and in Fig. 1 I have shown such a truss with the wire stretched thereon.

The sheet-metal truss A is placed on any suitable supports, B, and sprung out of shape by means of a downwardly-impelled pin or plunger, C. While the truss is thus sprung, the wire, the ends of which have been firmly united by any known process—such as pinning, clamping, brazing, soldering, &c.—is placed within the grooves D at the ends of the truss, and the latter then allowed to spring back to its normal shape, thus effectually confining said wire around the truss under the proper degree of tension. The proper length of wire and the dimensions of the truss being predetermined, the desired tension may be thus given to the wire; but this tension may be increased by tapping the face of the truss with a hammer. The uniform tension of the bands may be ascertained and secured in all instances by reference to the pitch of the musical note produced by their vibration between their holding-points.

The shape of the truss is immaterial; but the style illustrated at Fig. 1 is very advantageous on account of its lightness and strength.

The springing of the truss may be effected in various ways and by the employment of ordinary mechanical devices, all of which are immaterial and have no bearing on the merit and gist of this invention.

In scales of the heavier class I make the truss

from any malleable metal, and after placing the wire within the grooves around said truss I give said wire the proper tension by striking the face of the truss with a hammer or by
5 squeezing it between dies. In order, however, to facilitate the operation of effecting the desired tension of the wire, I form the truss with an excess of stock at the center, as shown at E in Fig. 4, or I form said center
10 concavo-convex, as shown at Fig. 5, it being obvious that any compression or hammering of the trusses so formed will more readily force the ends of the latter against the wire.

I do not wish to confine myself to any particular conformation of the truss as it is originally blanked or cast, as it is obvious that
15 said truss may be corrugated or formed in various shapes, as will best permit or facilitate the springing or extension of the same against the encompassing wire, the gist of this invention resting in the broad idea of a truss com-

posed of a single piece of metal extended against an encompassing torsion-wire. It is obvious, therefore, that my improvement may be utilized in various forms other than in
25 weighing-scales, since wherever the torsion of wire is rendered serviceable for any purpose my invention affords special advantages, and I do not wish to be limited to any particular use or adaptation of my invention. 30

I claim—

The combination, with a torsion-wire, of a truss composed of a single piece of metal extended or expanded against said wire, substantially as set forth. 35

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

WILLIAM KENT.

Witnesses:

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