(No Model.)

P. HIEN.

BRAKE BEAM.

No. 480,194. Patented Aug. 2, 1892.

Fig. 1.

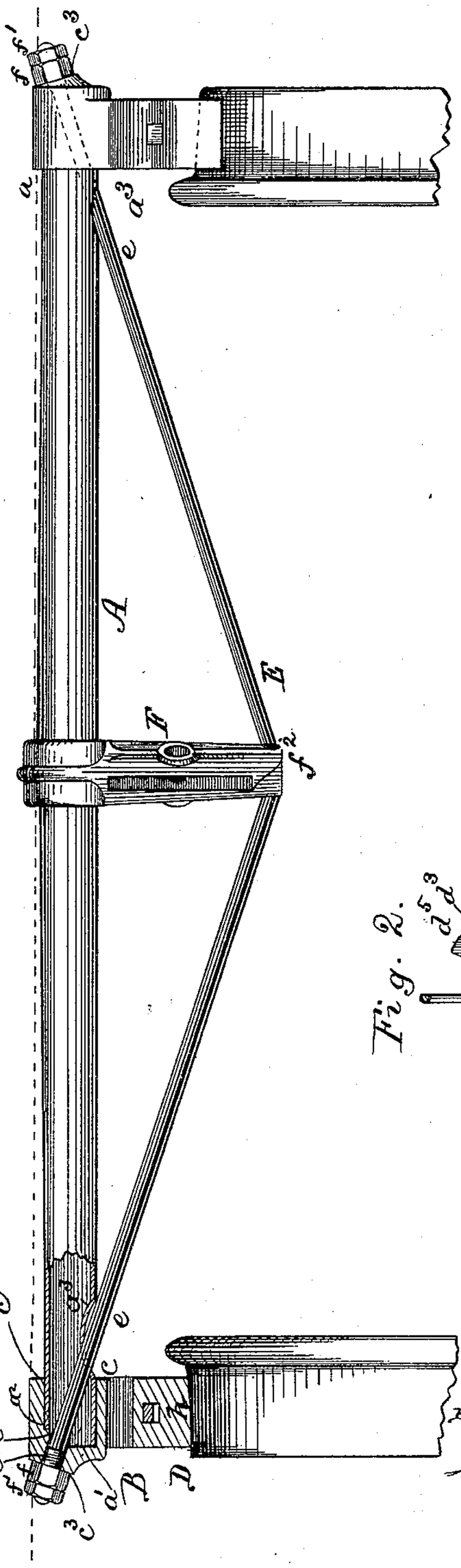
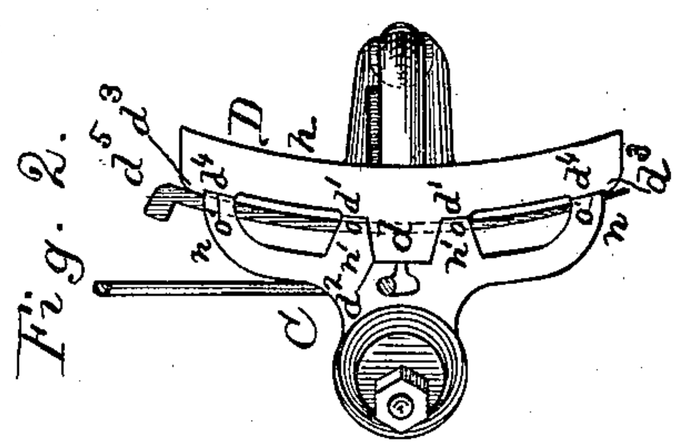


Fig. 2.



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UNITED STATES PATENT OFFICE.

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BRAKE-BEAM.

SPECIFICATION forming part of Letters Patent No. 480,194, dated August 2, 1892.

Application filed April 10, 1888. Serial No. 270,188. (No model.)

To all whom it may concern:

Be it known that I, PHILLIP HIEN, a citizen of the United States, residing at Rock Island, in the county of Rock Island and State of Illinois, have invented certain new and useful Improvements in Brake-Beams; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a plan view partly in section. Fig. 2 is an end view.

This invention relates to the construction of that class of brake-beams commonly termed "trussed metallic" beams, one species of which is described and claimed in my former patent, No. 361,009, dated April 12, 1887.

The object of the present invention is to utilize the resiliency of the metal of the compression member to obtain and maintain by means of the tension member of said trussed structure a camber in the beam, which can be regulated and adjusted at the time of manufacture or subsequent thereto to proportion the camber to the quality of the metal, size of compression member, and strength of beam required, and this I accomplish by combining in a trussed brake-beam a compression member, a tension member, and a strut, together with means for adjusting the relation of the several parts to produce and maintain the required camber in the compression member.

In the drawings hereto annexed the letter A indicates the compression member of the brake-beam, which is tubular, as in the patent referred to. The ends $a\,a$ of this member are open, as at a', and are provided with one or more notches a^2 in the peripheries. A short distance from the ends $a\,a$ in the beam there are slots $a^3\,a^3$.

The letters B B represent the brakes, consisting of the cup-shaped heads C C and shoes D D. The heads C are made with cup-shaped recesses c, and at the bottom of these recesses they have one projection c' or more to fit the notch or notches in the part A. In the wall of the bottom of the cup c is made the oblique hole c^2, the obliquity running from back to the front. On the outside around this hole c^2 the head has the flat surface c^3. This surface is at an angle to the minor axis of the part A and may be in plane parallel to that of a minor axis of the hole c^2. To the heads C C are secured the shoes D D by the key d^5. The head has the separate projections $n\,n\,n'\,n'$, having their faces $o\,o\,o'\,o'$ curved. The shoe D has the middle projection d of the same size and shape as the space d^2 between the projections $n\,n$ of the head C and a bearing d' on each side of the projection. At its ends the shoe has the rearward lip d^3 and inside of it the bearing $d^4\,d^4$. The bearings $d'\,d'$ correspond to the projections $n'\,n'$, and the bearings $d^4\,d^4$ to the projections $n\,n$. When the head and shoe are put together, the key d is slipped through holes in the several projections, as shown in Fig. 2. Of course it is obvious this is but one of the many forms of brakes to which this invention may be applied.

Passing from one end of the beam to the other is the tension member or truss-rod E. The ends $e\,e$ thereof run through the slots $a^3\,a^3$ and out through the open ends of the part A and through the holes $c^2\,c^2$ and are threaded. On these ends are placed the nuts $f\,f'$.

At the middle of the brake-beam is placed the strut F, about the end f^2 of which the truss-rod turns. This strut may be of any construction, the one shown in the patent or any other.

When the parts are put together, the nuts $f\,f'$ are tightened up, so as to draw the brake-beam from the straight line indicated by dotted lines to the shape shown in full lines. This gives the desired camber to the brake-beam. The notches in the end of the brake-beam and projections on the head efficiently prevent any rotation of the brakes upon the beam. The angle of the face c^3 forms a bearing for the nuts, which is inclined to the axis of rotation of the brakes, and consequently resists any tendency of the nuts to be turned when the brakes are applied. As to such of

these features as may be applicable to a solid brake-beam, I do not propose to confine myself to a hollow one.

I have been aware that a brake-beam structure consisting of a beam, a truss-rod, and interposed strut, the beam having a bend or camber produced by the set of the metal in the act of forming the camber and prior to the welding of the parts forming the truss, is not broadly novel.

In the present invention by producing the camber in the compression member by tension of the tension member and having the structure adjustable the camber can always be controlled, and by making the device of metal it is not susceptible to variations by exposure to the weather. The resiliency of the beam is made available, as the tension keeps the camber under a tense strain and its efficiency may always be insured by the means of adjustment.

Having thus fully described my invention, I claim—

1. A metallic brake-beam consisting of a compression member, a tension member, and an interposed strut, the compression member having a camber and the beam structure containing means of adjustment whereby the camber of the compression member is produced and the resiliency of the beam made available.

2. A metallic brake-beam consisting of a hollow compression member, a tension member, and an interposed strut, the compression member having a camber, and the beam structure containing means of adjustment whereby the camber of the compression member is produced and the resiliency of the beam made available.

3. The combination, with a trussed tubular brake-beam having a slot for the passage of the truss-rod and a notch for the reception of a lug on the brake-head, of a brake-head having a cupped recess for the reception of the end of the beam and provided with a lug adapted to enter the recess in the end of the beam, as set forth.

4. The combination, with a tubular beam notched at its end, of a brake-head having a cupped recess or socket with a lug corresponding to the notch in the end of the tubular beam, as set forth.

5. A trussed hollow or tubular brake-beam having a camber and having one or more notches at its ends, in combination with brake-heads having cup-shaped recesses, inclined bearings, and one or more projections, and the truss-rod passing through and holding said heads in position.

6. A trussed hollow or tubular brake-beam having a camber, in combination with brake-heads having cup-shaped recesses, a truss-rod passing through and holding said heads in position, and the inclined bearings for supporting the nuts on the end of the truss-rod.

7. In a trussed brake-beam, the combination of a tension member having threaded ends and nuts therefor, a strut, and a cambered compression member which maintains the tension of the parts and prevents the rotation of the nuts, substantially as specified.

8. In a trussed brake-beam, the combination, with a cambered compression member, of brake-heads having cup-shaped recesses for the reception of the ends of the cambered compression member and a tension-rod, substantially as and for the purposes specified.

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

PHILLIP HIEN.

Witnesses:
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