

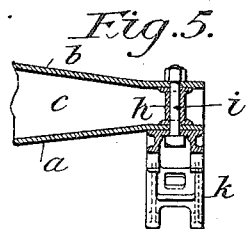
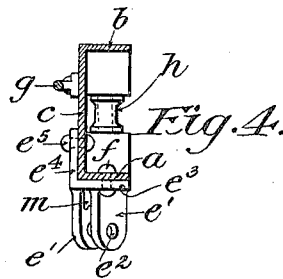
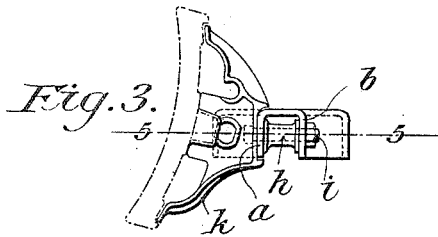
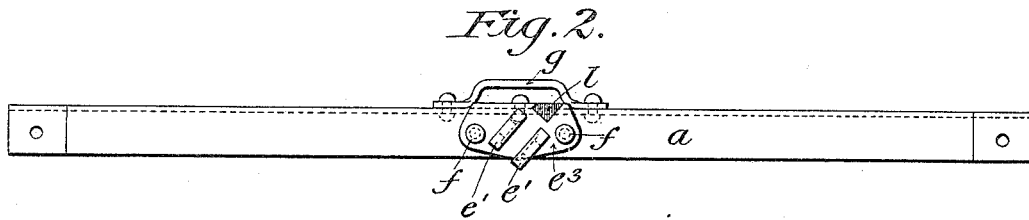
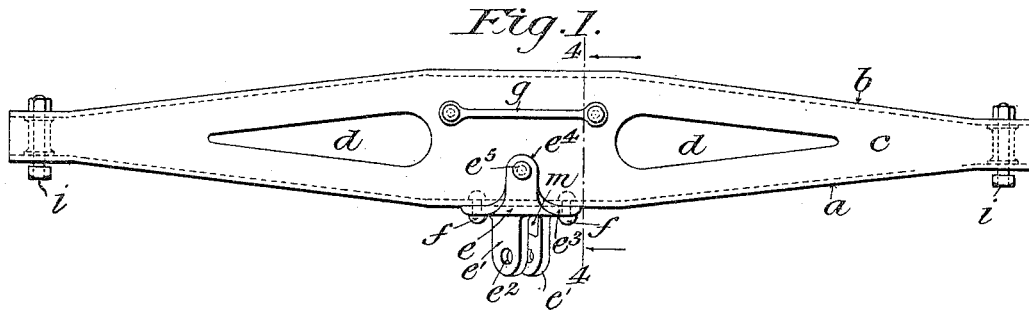
No. 649,891.

Patented May 15, 1900.

J. M. HANSEN.  
BRAKE BEAM.

(Application filed Feb. 9, 1900.)

(No Model.)



Witnesses:

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*Jane S. Fair*

Inventor:

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*Atty.*

# UNITED STATES PATENT OFFICE.

JOHN M. HANSEN, OF BELLEVUE, PENNSYLVANIA, ASSIGNOR TO THE  
PRESSED STEEL CAR COMPANY, OF PITTSBURG, PENNSYLVANIA.

## BRAKE-BEAM.

SPECIFICATION forming part of Letters Patent No. 649,891, dated May 15, 1900.

Application filed February 9, 1900. Serial No. 4,634. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN M. HANSEN, a citizen of the United States, residing at Bellevue, in the county of Allegheny and State of Pennsylvania, have invented a certain new and useful Improvement in Brake-Beams, of which the following is a full, clear, and exact description.

This invention relates to metal brake-beams which have their tension and compression members and strut made of a single integral piece. Such a brake-beam is illustrated in Patent No. 522,032, granted to Charles T. Schoen June 26, 1894, and the present invention is in the nature of an improvement upon the invention of that patent.

The improvement consists in a pressed-steel brake-beam having a lateral flange at each edge and a central portion having parallel sides next the lever fulcrum-post, so as to permit of the application of the said fulcrum-post on the tension-flange, and thus more effectively to utilize the strength of the beam; and the invention also consists in a brake-beam composed of integral tension, compression, and strut members having a fixed camber, a lever fulcrum-post on the tension member, and brake-head ends provided with thimbles, all as I will proceed now more particularly to set forth and claim.

In the accompanying drawings, illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a top plan view showing the preferred form of the improvement. Fig. 2 is a side elevation. Fig. 3 is an end elevation showing the brake-head in position. Fig. 4 is a cross-section taken in the plane of the line 4 4, Fig. 1. Fig. 5 is a horizontal section substantially in the plane of line 5 5 of Fig. 3.

*a* is the tension member, and *b* the compression member, and these two members are united by and are integral with the strut member *c*. The three members *a*, *b*, and *c*, in the preferred construction of my invention, are formed from a single integral piece of metal, preferably steel plate, pressed to shape. The members *a* and *b* are, mechanically, flanges made at right angles to the strut *c* and projecting only from one and the same side thereof. As shown in Fig. 1 especially, these in-

tegral parts are made with a central portion the sides of which are parallel, and thence the parts taper on each side toward the ends in convergent lines and terminate at their narrowest portions in parallel portions. The strut member *c* has the cut-out portions *d* in outline conforming to the taper of the tapered portions of the beam.

The post to which the brake-lever is fulcrumed is designated generally by the letter *e* and in its preferred construction is a casting having parallel ears *e'*, set at the proper angle and provided with holes *e<sup>2</sup>* for the reception of the pivot-pin, and having a base *e<sup>3</sup>*, by means of which the post may be secured, as by rivets *f*, to the tension member *a*. The base *e<sup>3</sup>* is constructed with a lateral lug *e<sup>4</sup>*, which laps over on the strut member *c* and is secured thereto, as by a rivet *e<sup>5</sup>*.

*g* is the center hanger, of any approved construction.

Interposed between the parallel-sided ends are thimbles *h*, through which the bolts *i*, used for attaching the brake-heads *k*, are passed, and these thimbles serve to reinforce the ends of the brake-beam and enable them to resist the strains of use.

It may be necessary in some instances to provide a depression *l* in the base of the post to enable the brake-lever to swing clear of said base.

In the interests of economy and saving of weight the ears *e'* may be recessed at *m*.

The provision of the parallel-sided central portion not only affords an extended base of support for the lever fulcrum-post, but also presents an extended mass of metal the more effectually to resist the strains to which the beam is subjected. The cutting out of the portions *d* in the strut member decreases the dead-weight of the beam and also increases the arch-like functions of the structure.

It will be observed that the camber of the beam is set in manufacture and is not subject to alteration by the exigencies of service and cannot be tampered with.

The arrangement of the lever fulcrum-post on the tension member instead of on the strut member *c*, as in the patent referred to, fully utilizes the capacity of the tension member as such.

The laterally-extended base  $e^3$  affords a firm support for the brake-lever, and the provision of the lateral lug  $e^4$ , extending over upon the strut member and secured thereto, reinforces  
5 the base against lateral strains.

The fulcrum-post, preferably made as a casting, as already stated, is most serviceable when made of malleable cast metal. Being riveted to the tension member, it naturally  
10 strengthens the beam at a vital point, and being also riveted to the strut it provides for more central application of the strain to the lever than in the patent referred to. This being the case, it is likely that in case of ac-  
15 cident the less expensive post would be the first to break, and thus the more expensive beam might escape injury and be in condition to receive readily a new post at small cost.

What I claim is—

20 1. A pressed-steel brake-beam, having a strut member provided with edge flanges projecting laterally therefrom in one direction only and constituting integral tension and  
25 compression members, the central and end portions of the flanges being parallel and the intervening portions converging from the central toward the end portions, and a lever fulcrum-post having a base applied to the tension member and a lateral lug applied to the  
30 strut member, substantially as described.

2. A pressed-steel brake-beam, made of a

single piece of metal, having a strut member, and side flanges projecting from one side only of the strut member and constituting tension and compression members, the central and  
35 end portions of the flanges being parallel and the intervening portions converging from the central toward the end portions, the strut having tapering openings next the central portion extending longitudinally of the beam,  
40 and a lever fulcrum-post applied to the tension member, substantially as described.

3. A pressed-steel brake-beam, having a strut member provided with edge flanges projecting laterally therefrom in one direction  
45 only and constituting integral tension and compression members, the camber being fixed, the central and end portions of the flanges being parallel and the intervening portions converging from the center toward the ends,  
50 a lever fulcrum-post having a base applied to the tension member and a lateral lug applied to the strut member, and thimbles arranged between the parallel end portions where the  
55 brake-heads are applied, substantially as described.

In testimony whereof I have hereunto set my hand this 6th day of February, A. D. 1900.

JOHN M. HANSEN.

Witnesses:

W. D. GEORGE,

C. E. POSTLETHWAITE.