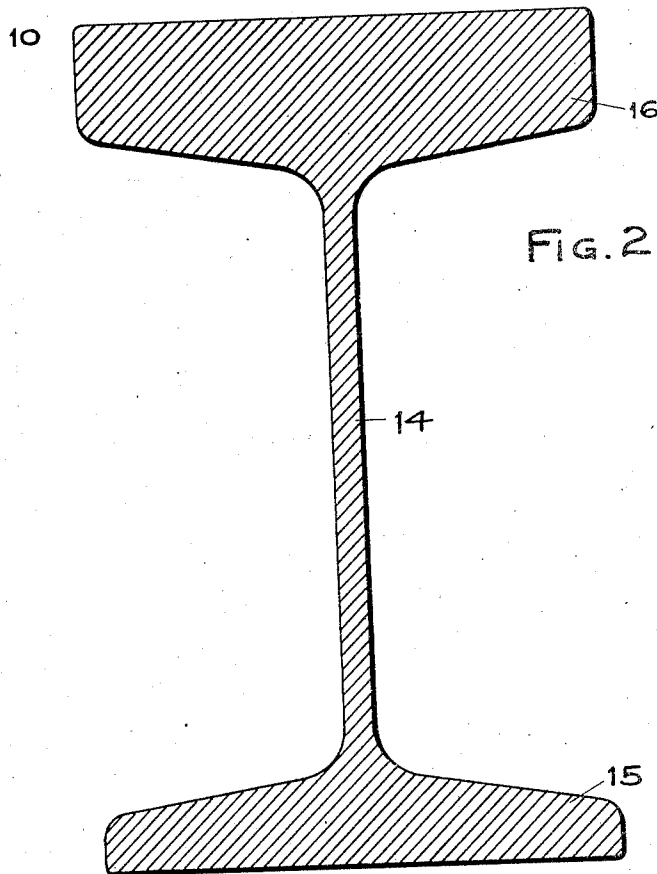
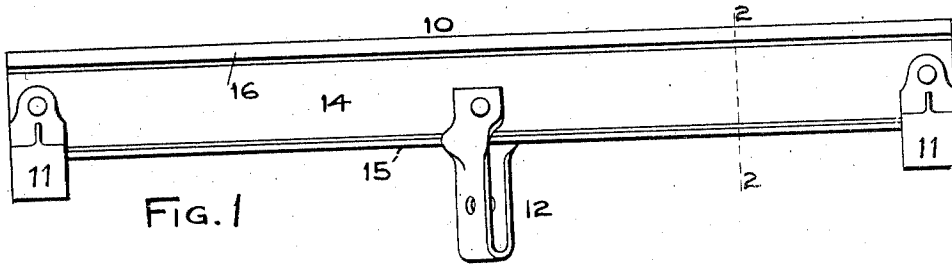


No. 868,909.

PATENTED OCT. 22, 1907.

S. A. CRONE.
BRAKE BEAM FOR RAILWAY CARS.
APPLICATION FILED MAR. 9, 1907.



WITNESSES:

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SETH A. CRONE, OF NEW YORK, N. Y.

BRAKE-BEAM FOR RAILWAY-CARS.

No. 868,909.

Specification of Letters Patent.

Patented Oct. 22, 1907.

Application filed March 9, 1907. Serial No. 361,481.

To all whom it may concern:

Be it known that I, SETH A. CRONE, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Brake-Beams for Railway-Cars, of which the following is a specification.

The invention relates to improvements in brake-beams for railway-cars, and consists in the novel features hereinafter described and particularly pointed out in the claims.

My invention pertains more especially to the class of brake-beams comprising a rolled flanged body-beam, a brake-head applied on each end thereof and a fulcrum secured at the central portion of and projecting from the body-beam to receive the usual brake-lever, and my invention resides in an improved body-beam to which the brake-heads and fulcrum may be secured.

The body-beams as heretofore constructed have not in many instances been efficient or reliable in that under the load applied at the fulcrum the compression member thereof was liable to and often did buckle or take a side twist and the beam became permanently set instead of springing back to its proper initial condition.

The purpose of my invention is to provide a body-beam adapted to the limited space allowed for brake-beams in regular service and to adequately resist all tendency to buckle or take a permanent deflection under any load likely to be exerted against it, and in carrying out my invention I provide a body-beam capable of withstanding several times the load ever likely to be applied to it and attain this result by imparting to the compression member the same or approximately the same strength in compression as the tension member has in tension. In the accomplishment of the purposes of my invention I so construct the beam-section that the neutral axis thereof is removed outwardly beyond the center of the section or toward the compression member, my object being to locate said neutral axis as far as conveniently possible from the outermost fibers of metal in the tension member, whereby the whole section becomes of greater strength and efficiency and capable of resisting the very powerful pulls exerted against it, in service, through the fulcrum.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawing, in which:

Figure 1 is a top-view of a brake-beam embodying my invention, and Fig. 2 is an enlarged transverse section through the body-beam on the dotted line 2-2 of Fig. 1.

In the drawings, 10 designates the rolled body-beam, 11 the brake-heads on the ends thereof and 12 the fulcrum applied to the central portion of said body-beam in the customary location and manner.

The body-beam 10 is preferably, though not necessarily in all instances, of I-form, having a web 14, a tension flange-member 15 and a compression flange-member 16, and by preference the said tension and compression members will be equal in width across their outer faces.

The drawing represents, as an illustration, a six and one-half inch beam having four inch flanges, which are straight and parallel with each other.

The body-beam 10 is novel in that the compression member 16 has applied in it a sufficient quantity of metal in excess of that contained in the tension member 15 to locate the neutral axis of the beam section nearer the compression than the tension member and secure an equalization of strength in said members, that is to attain in the compression member the same or approximately the same strength in compression as the tension member has in tension. The transfer of the neutral axis of the beam section outwardly toward the compression member enables me to have the outermost fibers of metal in the tension member as far as conveniently possible from said axis. The result of the construction presented is that the entire beam section is greatly increased in that strength required for a brake-beam and rendered capable of properly resisting a far greater pull, at the fulcrum, without buckling or taking a permanent deflection than the limits of safety require.

The matter of equalizing as nearly as may be the strength in the compression and tension members, that is so proportioning the compression and tension edge flanges that the compression flange will possess the same or approximately the same strength in compression as the tension flange has in tension, is of importance, aside from gaining efficiency, in that thereby no dead weight of metal is carried and the cost of production is reduced.

I do not limit the invention to the presence of flanges of equal width on the beam but preferably said flanges will be so constructed.

What I claim as my invention and desire to secure by Letters-Patent, is:—

1. In a brake-beam, a rolled body-beam having parallel integral flanges on its edges, one of said flanges constituting a compression member and the other a tension member, brake-heads on the ends of said beam, and a fulcrum secured to said beam, said flange constituting the compression member being thicker and containing sufficiently more metal than the flange constituting the tension member to locate the neutral axis of the beam section nearer said compression member than the tension member and to impart to said compression member approximately the same strength in compression as the tension member has in tension; substantially as set forth.

2. In a brake-beam, a rolled body-beam having parallel integral flanges on its edges, one of said flanges constituting a compression member and the other a tension member, brake-heads applied to the ends of said beam, and a fulcrum riveted to said beam, said flange which constitutes

the compression member containing sufficiently more metal than the flange constituting the tension member to locate the neutral axis of the beam section nearer said compression than the tension member and to impart to
5 said compression member approximately the same strength in compression as the tension member has in tension; substantially as set forth.

3. In a brake-beam, a rolled body-beam, brake-heads on the ends thereof and a fulcrum secured to said body-beam, said body-beam being of I-form in cross-section and having
10 its neutral axis nearer the compression than the tension member to attain in the compression member approximately the same strength in compression as the tension member has in tension; substantially as set forth.

15 4. In a brake-beam, a rolled body-beam, brake-heads on

the ends thereof and a fulcrum secured to said body-beam, said body-beam being of I-form in cross-section and having sufficient metal applied in the compression member to locate the neutral axis of the beam section nearer said
20 compression than the tension member and attain in the compression member approximately the same strength in compression as the tension member has, in tension; substantially as set forth.

Signed at New York city, in the county of New York and State of New York, this 8th day of March A. D. 1907.

SETH A. CRONE.

Witnesses:

ARTHUR MARION;
CHAS. C. GILL.