

No. 690,824.

Patented Jan. 7, 1902.

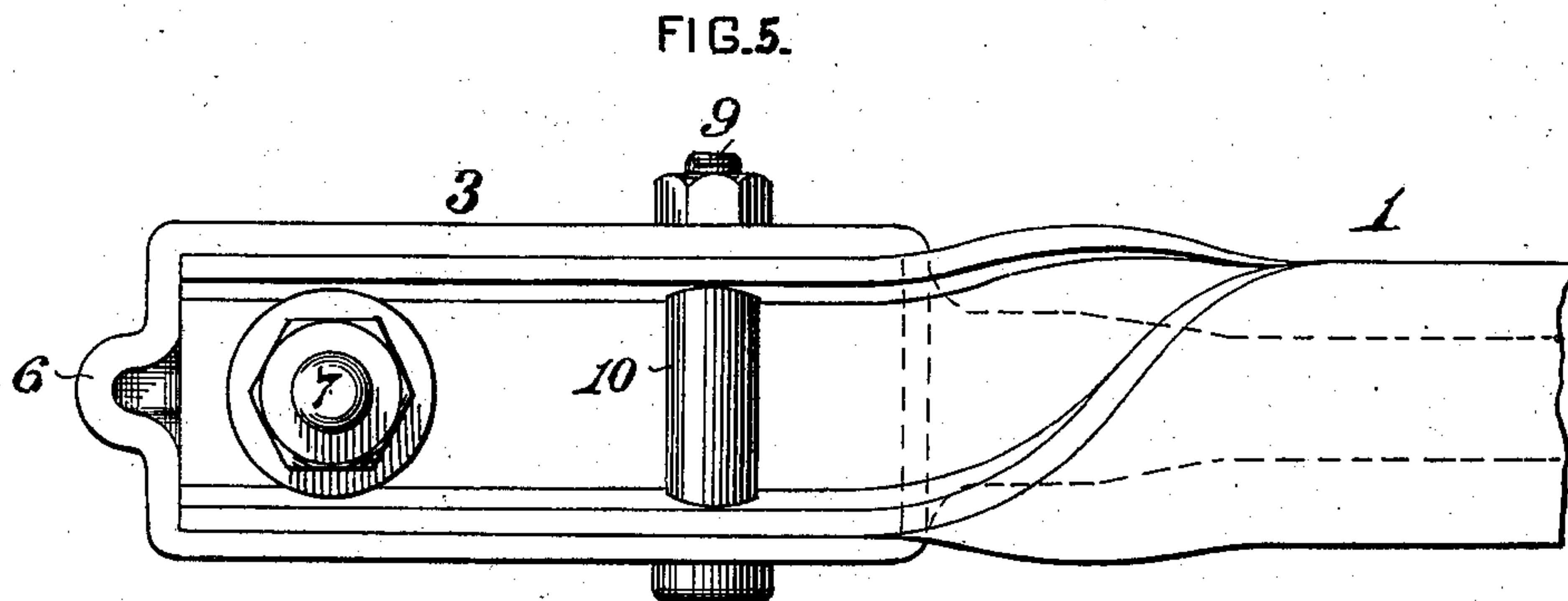
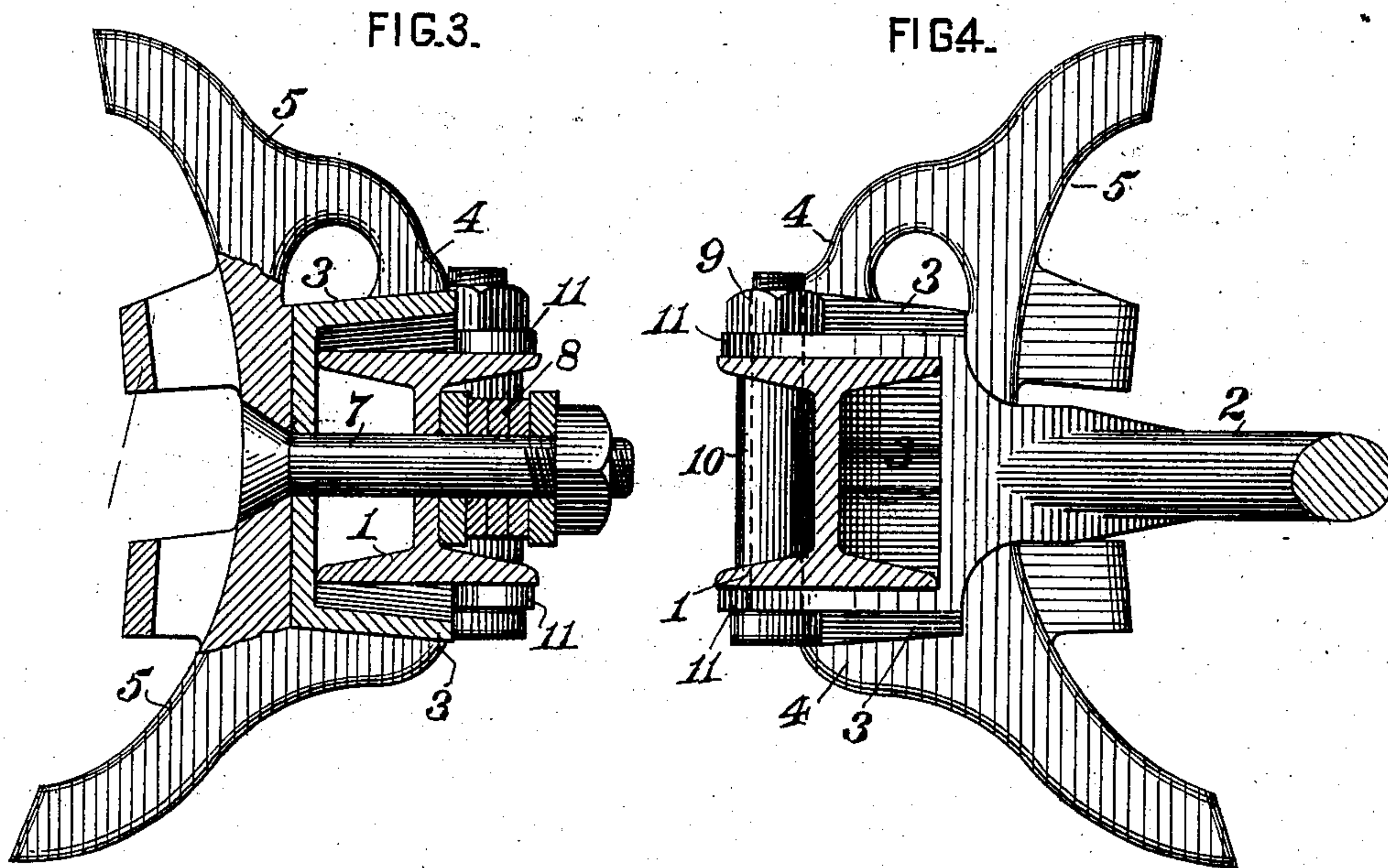
J. H. BAKER.

BRAKE BEAM.

(Application filed May 10, 1901.)

(No Model.)

2 Sheets—Sheet 2.



WITNESSES:

J. C. Gaither
F. M. Daffer

INVENTOR

James H. Baker
by *Darius B. Wolcott* Att'y.

UNITED STATES PATENT OFFICE.

JAMES H. BAKER, OF ALLEGHENY, PENNSYLVANIA, ASSIGNOR TO JAS. H. BAKER MANUFACTURING COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

BRAKE-BEAM.

SPECIFICATION forming part of Letters Patent No. 690,824, dated January 7, 1902.

Application filed May 10, 1901. Serial No. 59,657. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. BAKER, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Brake-Beams, of which improvements the following is a specification.

The invention described herein relates to certain improvements in brake-beams for railway-cars.

It has for its object a construction of metallic truss-beam whereby the Master Car-Builders' standard of brake-shoe head for wooden brake-beams can be applied to such metallic brake-beams.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a top plan view of a portion of my improved brake-beam. Fig. 2 is a side elevation of the same. Fig. 3 is a transverse section on a plane indicated by the line III III, Fig. 2. Fig. 4 is a similar view on a plane indicated by the line IV IV, Fig. 1. Fig. 5 is a side elevation, on an enlarged scale, of one end of the brake-beam, illustrating a modification of my improvement.

In the practice of my invention the compression member 1 of the brake-beam is formed of a structural shape, as an I-beam, so arranged that the middle portion thereof, which is subjected to the greatest strain, will have its web lying in the plane of such strain. The Master Car-Builders' standard brake-head as applied to wooden brake-beams is formed with ears or lugs adapted to fit upon the sides of the beam to which the shoe is secured by a bolt having its head countersunk in the shoe-head and passing through the beam. In order to secure such a shoe-head to the structural compression member without materially weakening the same and at the same time maintain the greatest strength in the beam at the point of greatest strain, it is preferred that the ends of the compression member should be given a twist, so that the web at the ends of the compression member will lie in a plane at right angles to the plane

of the web in the body portion of such member. By thus twisting the ends of the compression member the web at the ends is brought into a plane at right angles to the bolt employed for securing the shoe-head to the compression member, so that attachment to the shoe-head can be effected by simply forming a hole through the web of the twisted or turned ends. As the wooden beams heretofore used were made with greater transverse dimensions than is necessary when the compression member of a truss-beam is formed of a structural shape, provision must be made for forming seats for the standard shoe-heads on the compression member. To this end the tension member 2 of the beam is formed at its ends with seats for the reception of the shoe-head. The external dimensions of the seats or supporting portions 3 for the shoe-heads are made in such manner as to fit within the recesses in the shoe-head and are made to tightly fit upon the ends of the compression member. A desirable manner of forming the seats on the ends of the tension member consists in shaping the ends of such member to the form of troughs or open-sided boxes, which will bear against the sides and ends of the compression member and serve not only as seats for the shoe-heads, but also as a means for connecting the tension member to the compression member. The inner portions of these boxes, adjacent to the tension member, are made to hug the beam of compression member tightly, as shown in Figs. 2, 3, and 4, while the portion which is to form the seat for the shoe-head is spread out so as to increase the lateral dimensions of the boxes to the required extent to fit between the lugs 4 on the rear faces of the shoe-heads 5. It is preferable that the ends of the compression member should be spread so that its corners will fit into and form a support for the outer ends of the boxes or seats, as clearly shown in Fig. 2. This spreading can be effected by slightly splitting the web of the compression member and separating the divided portion. The sides of the boxes stand away from the beam and have sufficient resilience to permit of their being slightly compressed when the shoe-head is forced upon

them. This construction will permit of the fitting of shoe-heads of different dimensions between their lugs 4, due to the differences in casting, and will always insure firm seats for the shoe-heads without regard to such differences in casting. In order that the ends of the boxes may firmly bear upon the corners of the beam, the end walls of such boxes are preferably made with a bend or fold 6, which will permit of their slightly yielding when the box is forced upon the beam, as shown in Fig. 2. The shoe-heads are secured to the ends of the beam by means of bolts 7, having their heads countersunk in the shoe-heads and passing back through the seats and the web of the beam. A spring 8 is placed around the rear ends of these bolts and is tightly compressed by means of nuts, so that the shoe-heads will be tightly secured and held in position. These springs being placed under tension will serve to draw the shoe-heads firmly to position in case they were not firmly seated when first applied. The bolts 7 also serve as a means for attaching the tension member to the compression member. The seats and the tension member of which they are formed are secured to the beams by means of bolts 9, passing through the flanges of the beam, which are reinforced or braced in line of pull of the bolts by means of sleeves 10, fitting around the bolts and bearing at their ends against the inner faces of the flanges. In the construction shown in Figs. 1 and 4 the sides of the boxes are made of a width only slightly greater than the depth of the recesses in the rear of the shoe-heads, and in order that the securing bolts or rivets 9 may not pass through the web of the compression member lugs 11 are formed on the boxes near their rear ends, and the bolts pass through such lugs and through the compression member, as stated.

Where new brake-heads are employed, the boxes may be made to snugly fit the sides of the beam or compression member, as shown in Fig. 5, and in such case the sides of the boxes are made of a width corresponding to the widths of the flanges of the beam, and the lugs on the shoe-heads are suitably spaced to fit on the seats or boxes.

It will be observed that the ends of the boxes or seats 3 bear upon the ends of the compression member 1, so that the strain from the tension member is transmitted in part by the bolts 9 and in part by the end walls of the boxes or seats.

I claim herein as my invention—

1. A truss brake-beam, having in combina-

tion, a structurally-shaped compression member, a tension member, and box-shaped seats for brake-shoe heads formed on the ends of the tension member and secured to the compression member, substantially as set forth.

2. A truss brake-beam, having in combination, a structurally-shaped compression member, a tension member provided at its ends with open side boxes or troughs adapted to fit over the ends of the compression member and serve as a means for connecting the ends of the tension member to the compression member, substantially as set forth.

3. A truss brake-beam, having in combination, a structurally-shaped compression member having its ends twisted through an arc of ninety degrees, a tension member and seats for brake-shoe heads formed on the ends of the tension member and secured to the ends of the compression member, substantially as set forth.

4. A truss brake-beam, having in combination a structurally-shaped compression member, a tension member, and box-shaped seats having yielding sides for the brake-shoe heads, secured to the ends of the tension member, substantially as set forth.

5. A truss brake-beam, having in combination, an I-shaped compression member having its ends twisted through an arc of ninety degrees, a tension member, box-shaped seats for the brake-shoe heads arranged on the ends of the compression member, brake-shoe heads fitting on said seats and bolts extending from the heads through the seats and the web of the compression member, substantially as set forth.

6. A trussed brake-beam having in combination an I-shaped compression member, having its ends twisted through an arc of ninety degrees, a tension member having its ends secured to the ends of the compression member, and brake-shoe heads, substantially as set forth.

7. A trussed brake-beam having in combination a structurally-shaped compression member, a tension member, box-shaped seats having yielding sides, brake-shoe heads carried by said seats, and spring-actuated bolts for holding the heads upon their seats, substantially as set forth.

In testimony whereof I have hereunto set my hand.

JAMES H. BAKER.

Witnesses:

DARWIN S. WOLCOTT,
GEO. B. BLEMING.