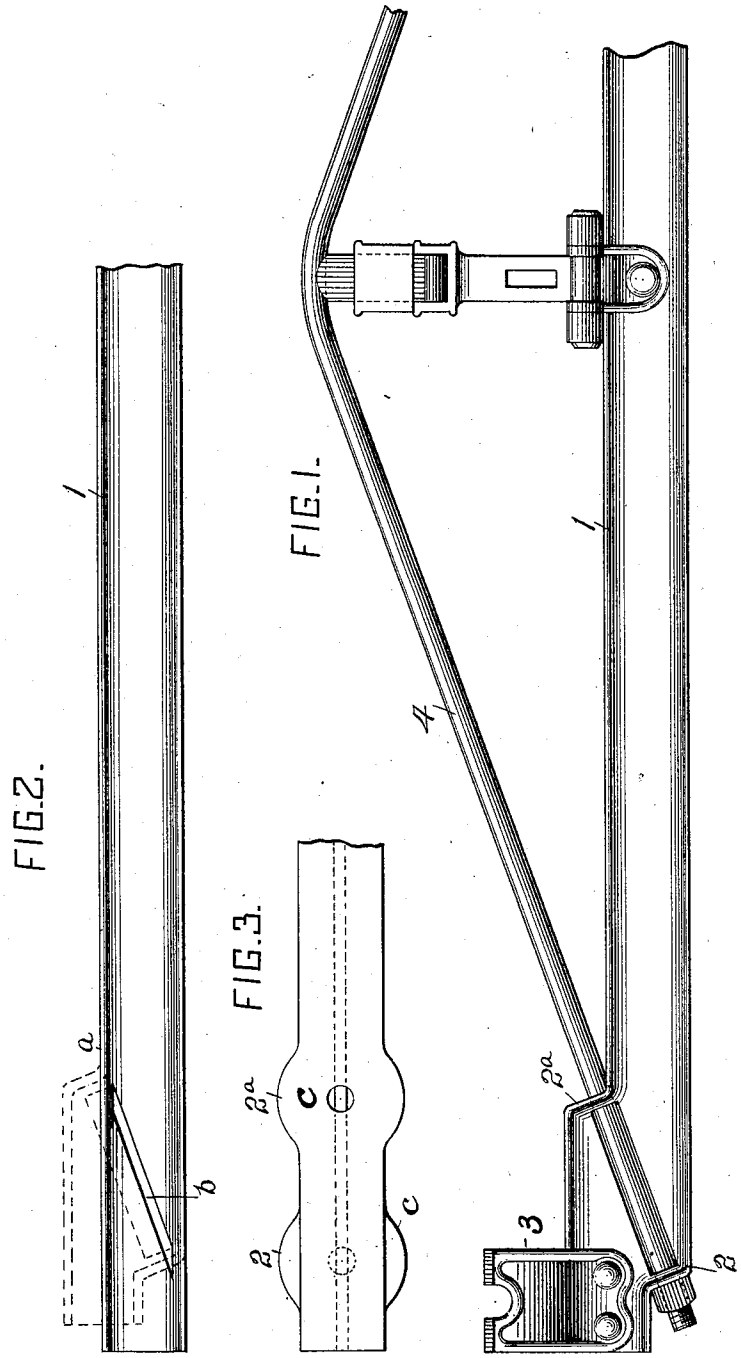
No. 718,812. PATENTED JAN. 20, 1903.

J. H. BAKER.

BRAKE BEAM.

APPLICATION FILED MAY 29, 1902.

NO MODEL. 2 SHEETS—SHEET 1.



WITNESSES:
Herbert Bradley.
Fred Kirchner.

INVENTOR
James H. Baker
by Dannie S. Wolcott Att'y.

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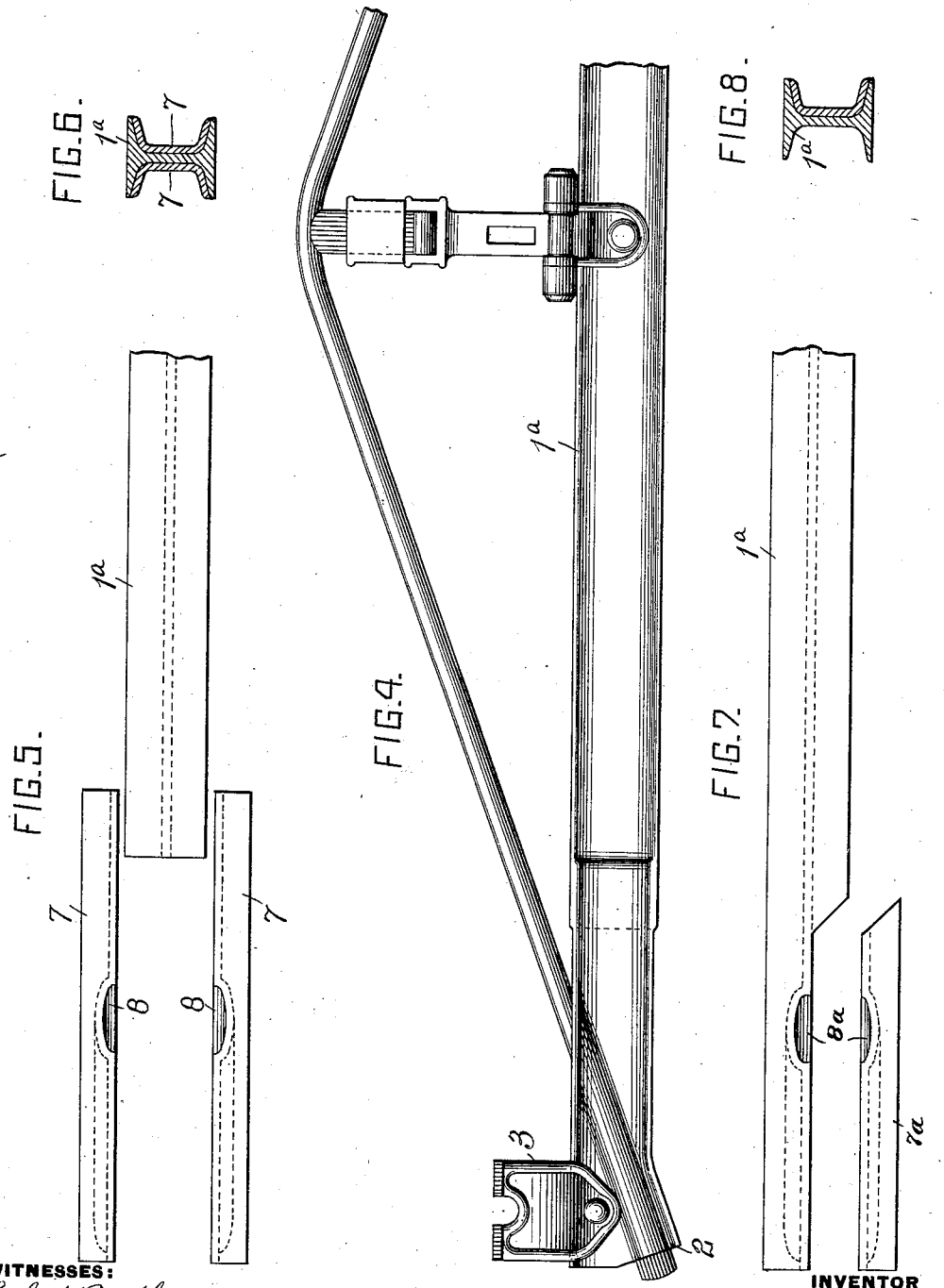

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UNITED STATES PATENT OFFICE.

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. 718,812, dated January 20, 1903.

Application filed May 29, 1902. Serial No. 109,418. (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, and has for its object such a construction and arrangement of parts that the bearing of the tension member on a structurally-shaped compression member shall be in the rear of the brake-shoe head and in the plane of the web of the compression member.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a view in side elevation of a portion of a brake-beam embodying my improvement. Fig. 2 is a view illustrative of a step in the manufacture of the compression member shown in Fig. 1. Fig. 3 is a plan view of the beam, showing another step in the manufacture of the compression member. Fig. 4 is a view similar to Fig. 1, illustrating a modification of the improvement. Fig. 5 illustrates a step in the manufacture of the compression member shown in Fig. 4. Fig. 6 is a transverse section of the parts shown in Fig. 5 arranged together. Fig. 7 is a view illustrating a modification of the step shown in Fig. 5, and Fig. 8 is a transverse section of the parts shown in Fig. 7 arranged together or in contact.

The compression member 1 is formed of an I-beam and in the construction shown in Fig. 1 is provided or formed with a shoulder 2 on its outer face, such shoulder being in the rear of and closely adjacent to the brake-shoe head 3. The tension member 4 passes through the flanges and web of the compression member and is in a plane with the web of such member. A convenient means for forming the shoulder 2 on the compression member and an opening through the web consists in first slotting the web of the compression member at an acute angle to the axes of the member, as at *b*, (indicated in Fig. 2,) and then by means of suitable clamping devices and bending mechanism shifting the portion of the compression member between the points *a* and the end longitudinally and laterally, thereby forming shoulders or offsets 2 and 2^a in the compression member. The opening or slot cut in the flanges should be narrower than the diameter of the tension member, as in bending the compression member to form the shoulders 2 the slot is widened, as indicated by full and dotted lines in Fig. 2. The slot *b* in the compression member is so located with reference to the end of such member that when the latter is bent to form the shoulders or bearing-seats for the tension member sufficient room will be afforded between the slot and the end for the reception of the brake-shoe head 3, as shown in Fig. 1. By forming the slot through the web or cutting away portions of the web in the direction of bend prior to the bending all crumpling or warping of the web is avoided, as only the flange portions are subjected to the bending operation. Before bending laterally the member 1 is subjected to longitudinal compression, so as to spread the flanges at the ends of the slot and form broad seats or shoulders *c*, as shown in Fig. 3.

In the construction shown in Fig. 3 the body portion or that portion 1^a between the ends of the tension member is formed of an I-beam, while the end portions are formed of channel-bars 7, which are welded or otherwise secured to the ends of the body portion of the compression member. Prior to securing the channel-bars to the body portion of the compression member grooves or recesses 8 are formed in the inner faces of the channel-bars at an acute angle to the axes of the bars, so that when such bars are placed together such grooves will form openings or passages through which the ends of the tension member can be passed. After the formation of such grooves the channel-bars are arranged together face to face, with their ends overlapping the end of the compression member, as indicated in Figs. 5 and 8, and the bars are welded together and to the compression member, so as to form an integral

compression member. A shoulder or bearing 2 for the end of the tension member is formed in the rear of the seat for the brake-shoe head 3, as clearly shown in Fig. 4.

In lieu of forming the ends of the compression member of two channel-bars, as shown in Figs. 5 and 6, the I-beam may be made of the full length of the brake-beam and the flanges on one side at the ends of the beam cut away, thereby transforming such ends into channel-bars, as shown in Fig. 7. Channel-bars 7^a are then welded to the main beam at the places where the flanges were cut away. Prior to welding the channel-bars in position grooves or recesses 8^a are formed in the adjacent faces of the beams and bars at acute angles to the axes thereof, whereby openings are formed in the plane of the web of the completed compression member for the passage of the ends of the tension member.

It is characteristic of my improvement that the tension member while passing through the compression member, portions of which are cut away in the construction shown in Figs. 1 and 2, have a bearing on the compression member in the rear of the points of greatest resistance to the load and that such cut-away portion is within such points of greatest load, and so the strength or stiffness of the beam is not materially injured.

I claim herein as my invention—

1. A brake-beam having in combination, an I-shaped compression member, a tension member in a plane with the web of the compression member and the ends of the tension member passing through the flanges and web of the compression member, substantially as set forth.

2. A brake-beam, having in combination, an I-shaped compression member, a tension member in a plane with the web of the compression member, the ends of the tension member passing through the compression member, and bearings formed on the latter for the tension member in the rear of the seat for the brake-shoe head, substantially as set forth.

3. A brake-beam having in combination a compression member formed of an I-beam, the flanges at the ends and on one side of the beam being cut away, and reinforcing channel-bars secured to the ends of the beam, substantially as set forth.

4. A brake-beam having in combination, a compression member formed of an I-beam, the flanges at the ends and on one side of the beam being cut away, and reinforcing channel-bars secured to the ends of the beam, the adjacent faces of the webs and of the beams and channel-bars being diagonally grooved, substantially as set forth.

In testimony whereof I have hereunto set my hand.

JAMES H. BAKER.

Witnesses:

F. E. GAITHER,

DARWIN S. WOLCOTT.