No. 606,756. Patented July 5, 1898.

L. C. BURGESS.

BRAKE BEAM.

(Application filed Sept. 30, 1897.)

(No Model.)

Fig. 1.

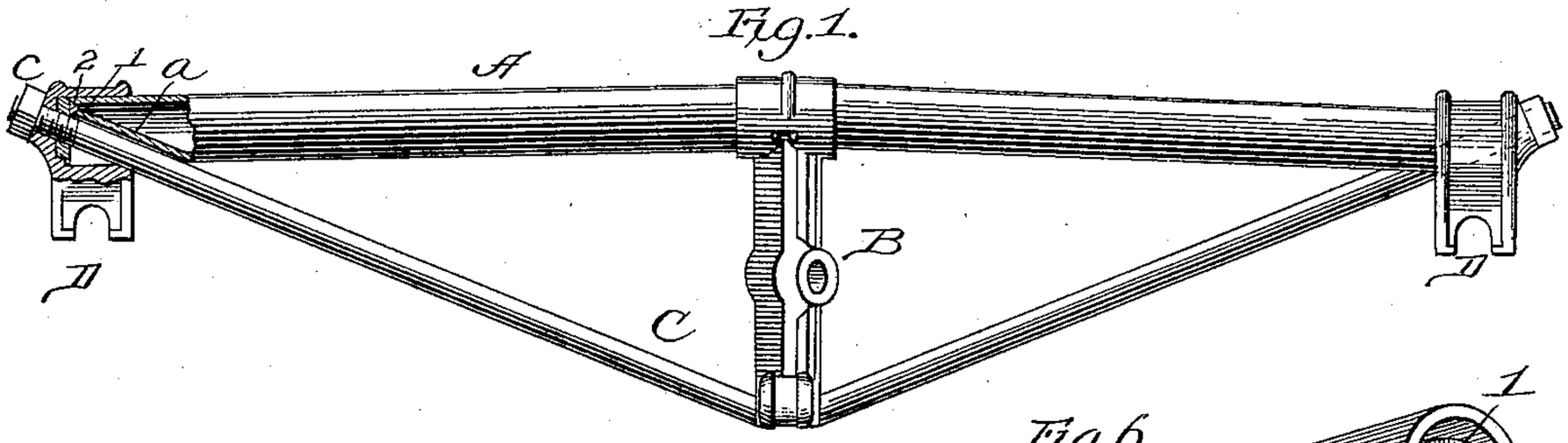


Fig. 2

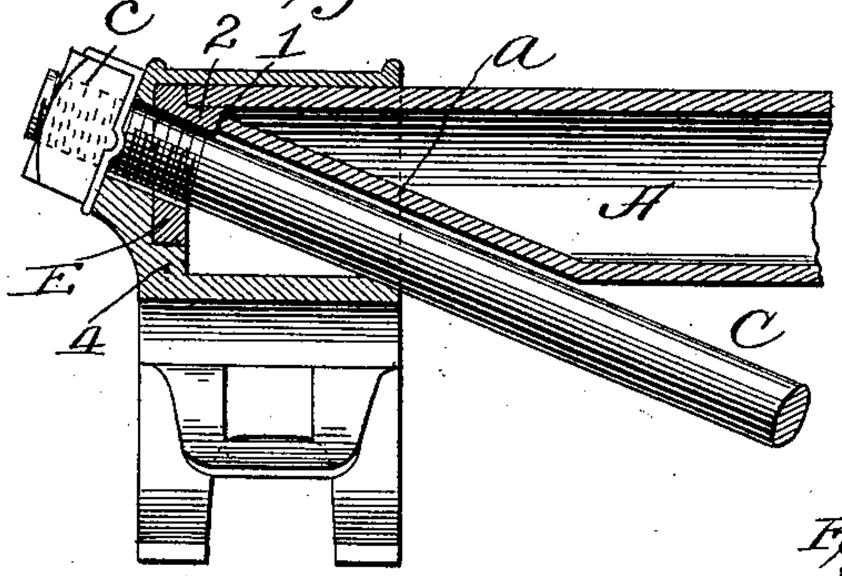


Fig. 6.

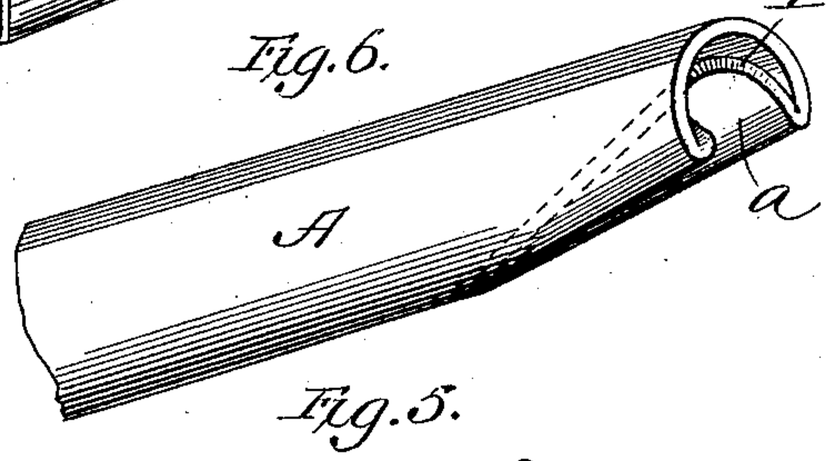


Fig. 5.

Fig. 4.

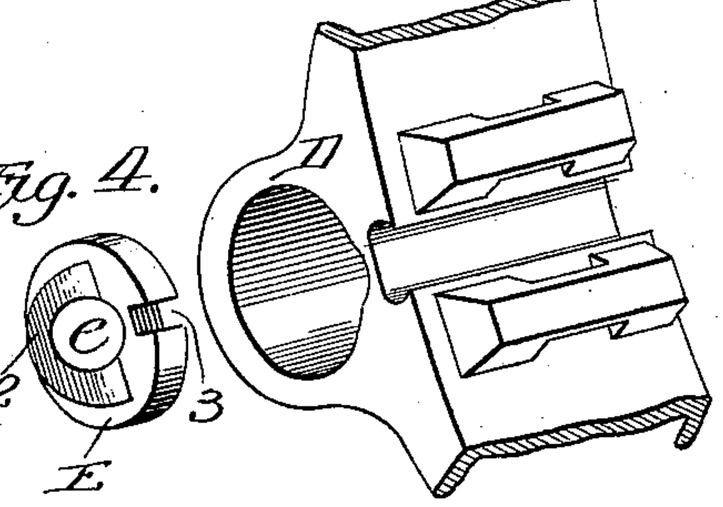


Fig. 3.

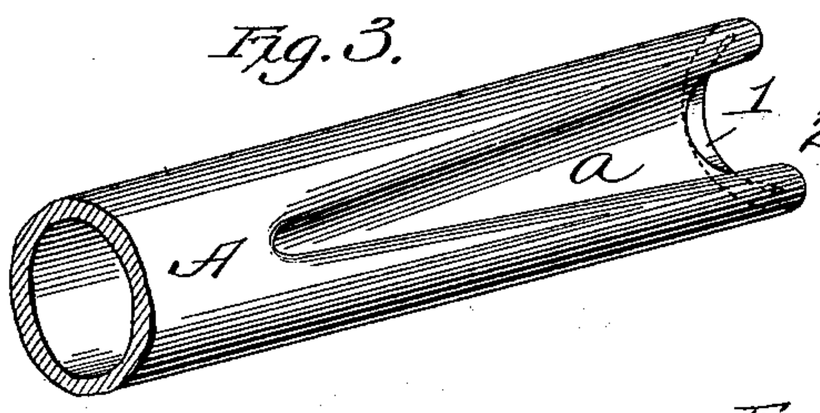


Fig. 10.

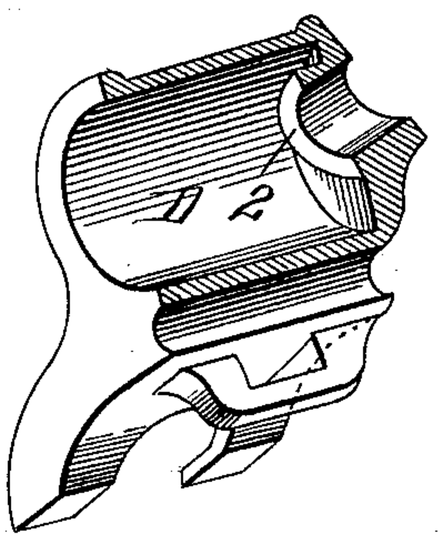


Fig. 7.

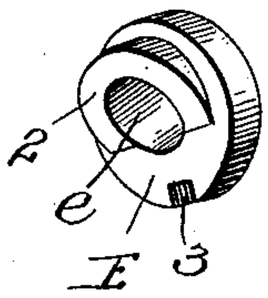


Fig. 8.

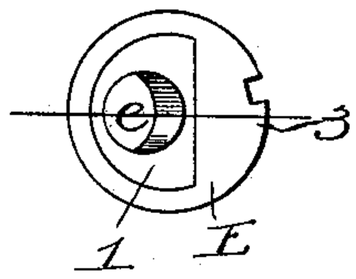
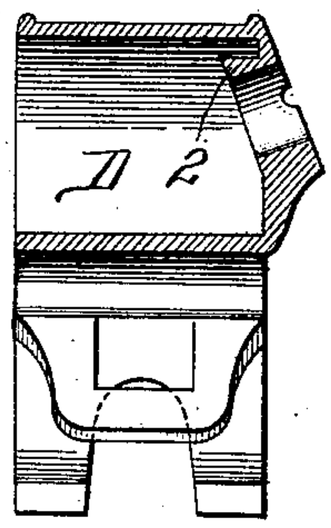


Fig. 9.



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BRAKE-BEAM.

SPECIFICATION forming part of Letters Patent No. 606,756, dated July 5, 1898.

Application filed September 30, 1897. Serial No. 653,638. (No model.)

To all whom it may concern:

Be it known that I, LUTHER C. BURGESS, a citizen of the United States, residing at Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Brake-Beams; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a trussed brake-beam, parts broken away to show a construction which embodies my invention. Fig. 2 is an enlarged sectional view of one end of the beam and its brake-head. Figs. 3, 4, and 5 are detached perspective views of the end of a compression member, an end disk, and part of a brake-head, respectively, said parts arranged in line to indicate the manner of setting up the beam or combining the parts. Fig. 6 is a detached perspective view of the end of the compression member of a beam. Fig. 7 is a perspective view of an end disk notched as for a centrally-hung beam. Fig. 8 is a face or plan view of an end disk notched to one side of the central line to change the throw of the head, as where the beam is to be hung below the center of the wheel. Figs. 9 and 10 are sectional views of a modification wherein the invention is applied to the brake-head instead of to an independent disk, as in the preferred form.

Like symbols refer to like parts wherever they occur.

My invention relates to the construction of that class of trussed metallic brake-beams wherein there is combined with a strut or post and tension member a tubular compression member having at its ends depressions or indented channels for the reception of the ends of the tension member, and has for its object to distribute the compressive or crushing force uniformly over the tubular compression member and cause the tension member to take up any torsional strains, and thus relieve the compression member thereof.

Practice has demonstrated that in order to obtain the maximum of strength with the minimum of weight in the construction of metallic brake-beams a tubular back or compression member should be employed and the compression and tension members should form a true truss, or, in other words, should intersect at the points of applied power or on the central lines of the brake-heads. To accomplish this, one practice is to slot the tubular compression member for the passage of the tension member, which, while it preserves the end bearing between the brake-heads and compression member, and thus uniformly distributes the compressive or crushing force over the compression member, at the same time weakens that member at the points where it is subjected to torsional strains, to avoid which a second method has been devised—viz., the indentation of the tubular compression member at its ends to form recesses or seats for the tension member—and this method, while it preserves the continuity of the compression member at the points where it is subjected to torsional strains, at the same time reduces the end bearings between the compression member and the brake-heads about one-half and causes an unequal distribution of the compressive or crushing force on the compression member. To overcome these several objections, I combine with a brake-head, a strut or post, a tension member, and a tubular compression member having an indentation or depression for the reception of the tension-rod, an offset bearing or filling-block whose face is at substantially right angles to the plane of the tension-rod and adapted to engage the reëntrant edge of the compression member, whereby the force is uniformly distributed over the compression member, and cross-bending or torsional strains transferred from the brake-head to the tension member, and said offset or filling-block, which in the specified combination embodies the main feature of my invention, may be formed either upon or integral with the brake-head or independently thereof. I prefer, however, to form said offset or filling-block upon one face of an independent disk, which is interposed between the end of the compression member and the brake-head and through which the tension-rod passes, as I am thereby enabled to notch the disk at any desired point to obtain the required "throw" of the head, and such an independent offset or filling-block with a disk embodies a secondary feature of my invention.

There are other minor features of invention, all as will hereinafter more fully appear.

I will now proceed to describe my invention more fully, so that others skilled in the art to which it appertains may apply the same.

In the drawings, A indicates the compression member, B the strut or post, and C the tension member, of a trussed brake-beam provided with the brake-heads D D.

The compression member A, which is of tubular form, is swaged or indented at its ends, as at *a a*, on the lines of intersection therewith of the ends of the tension member C to form recesses or seats for said tension member, and as a result thereof about one-half, more or less, of the edge of the tube is carried back or within the tube forming the reëntrant edge 1 at substantially right angles to the line of that end of tension-rod C.

2 indicates an offset or filler-block, whose bearing-face is inclined or in a plane at substantially right angles to the axis of the tension-rod, and said offset or filler-block 2 may, if desired, be formed integral with the brake-head (see Figs. 9 and 10) and at the bottom of the socket thereof, or, as is preferred, upon one face of a detachable disk E, said disk having a suitably-inclined perforation or bore *e* for the passage of the tension-rod C. The disk E, provided with the bore or perforation *e* for the passage of the tension-rod and with the inclined offset or filler-block 2, may be notched, as at 3, to engage a lug 4 (see Fig. 2) within the brake-head D, and thus prevent the rotation of the head and preserve its throw.

In case the beam is to be hung central—that is to say, with the strut or post on the plane of the axle and parallel with the track—the notch 3 in the disk will be opposite the center or highest point of the offset 2 (see Figs. 4 and 7) and will engage a lug 4 in the head in line with the center of the brake-head, (what is termed a "central-made" head,) and the proper throw of the head for any given position of the beam below the center of the wheel can be obtained by making the notch 3 the given distance above the central line, as indicated on Fig. 8 of the drawings.

The several parts of the structure being formed substantially as hereinbefore pointed out, they may be combined, or the trussed beam set up, as follows: If the offset or filler-block 2 be formed integral with the brake-head, (which is not advised because a distinct head for each throw would be required,) the strut B and brake-heads D D are applied to the compression member A. The tension-rod C is then inserted and the nuts *c c* applied and screwed home to give the desired camber to the beam, and in so doing the offset or filler-block 2 will seat itself on the reentrant edge 1, while the socket of the brake-head will rest and bear evenly on the flush edge of the tubular compression member. If the offset or filler-block 2 is formed on the perforated disk E, then said disk is applied to the end of the compression member A, with the inclined face of 2 bearing on the reëntrant edge 1, after which the brake-head D and tension-rod C are applied, as before noted, and the whole drawn home by means of the nuts *c c* and the brake-beam given the desired camber, which will take all the slack out of the structure and seat the offset or filler-block and disk uniformly on the edge of the tubular compression member A. In either case when power is applied to the brake-beam, as in applying the brakes, the compressive or crushing force will from the brake-head, through the medium of offset or filler-block 2, be distributed uniformly over the tubular compression member, and at the same time any torsional strains passing from the head will, through the medium of said filler-block, be diverted to the tension member C, thus relieving the tubular compression member of said strains.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a trussed brake-beam, the combination with a tension member and a brake-head, of a tubular compression member having an indentation constituting a seat for the tension member and a reëntrant edge, of a filler-block having a bearing-face in a plane at right angles to the tension member, and which engages the reëntrant edge of the compression member; substantially as and for the purposes specified.

2. In a trussed brake-beam, the combination with a tension member and a brake-head, of a compression member having an indentation constituting a seat for the tension member, and a reëntrant edge, and a disk having an inclined offset which engages the reëntrant edge of the compression member and a perforation for the passage of the tension-rod, substantially as and for the purposes specified.

3. In a trussed brake-beam, the combination with a tension-rod, a brake-head, and a compression member having an indentation for the reception of the tension member, of a disk having an inclined offset or filler-block and notched at its edge to engage a lug in the socket of the brake-head; substantially as and for the purposes specified.

In testimony whereof I affix my signature, in presence of two witnesses, this 27th day of September, 1897.

LUTHER C. BURGESS.

Witnesses:
E. T. WALKER,
C. FRANK HUNTOON.