(No Model.)

# H. B. ROBISCHUNG.

## BRAKE BEAM.

No. 568,044. Patented Sept. 22, 1896.

Fig. 1.

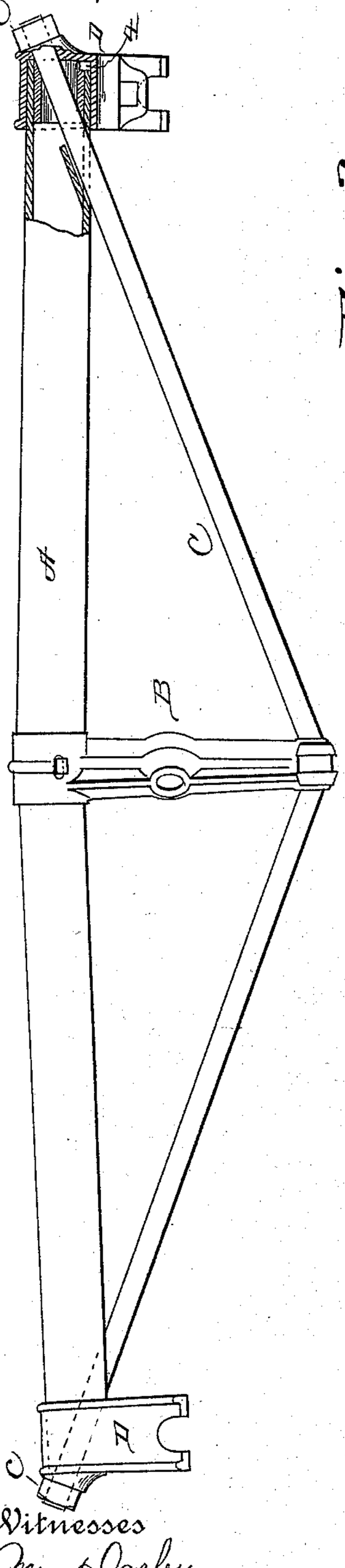


Fig. 3.

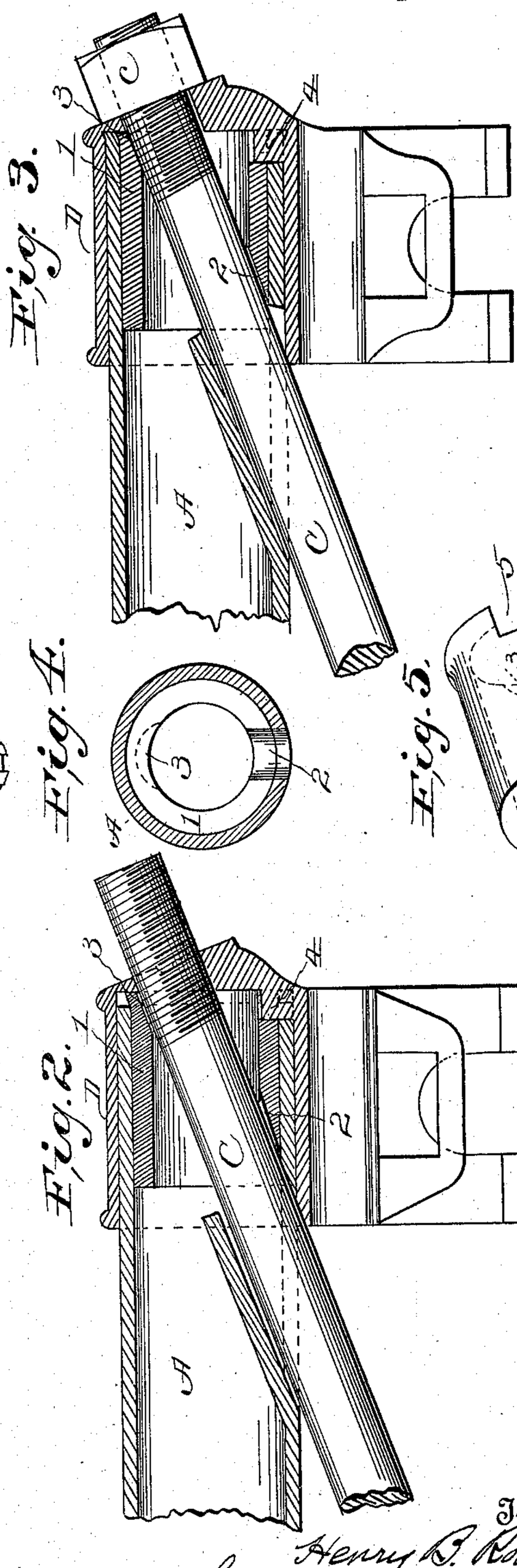


Fig. 4.




Fig. 5.

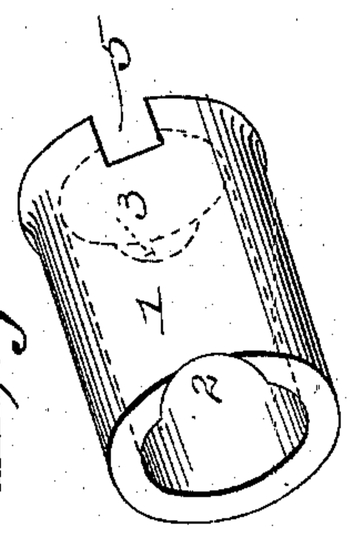


Fig. 2.




Witnesses
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# UNITED STATES PATENT OFFICE.

HENRY B. ROBISCHUNG, OF KALAMAZOO, MICHIGAN, ASSIGNOR TO THE CHICAGO RAILWAY EQUIPMENT COMPANY, OF CHICAGO, ILLINOIS.

## BRAKE-BEAM.

SPECIFICATION forming part of Letters Patent No. 568,044, dated September 22, 1896.

Application filed March 21, 1896. Serial No. 584,299. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY B. ROBISCHUNG, a citizen of the United States, residing at Kalamazoo, in the county of Kalamazoo, State of Michigan, have invented certain new and useful Improvements in Brake-Beams; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a top plan view of a trussed brake-beam, one end being in section to show the features which embody my invention. Fig. 2 is an enlarged longitudinal section of one end of the beam, showing the relation of the bushing or core to the beam in fitting up and before the bushing or core and brake-head have been forced home. Fig. 3 is a section similar to Fig. 2 after the brake-head and bushing or core have been forced home. Fig. 4 is an inner end view of the core or bushing detached, and Fig. 5 is a perspective view of the core or bushing detached.

Like symbols refer to like parts wherever they occur.

My invention relates to the construction of that class of brake-beams wherein a hollow structure (as, for instance, a tube, either closed or longitudinally slotted) is employed to carry the brake-heads, said brake-heads being cupped or provided with sockets for the reception of the ends of the beam, so that the head bears directly on the end of the beam, and while the invention has been especially devised with reference to overcoming certain defects in trussed beams, and therefore is herein illustrated as applied to such a beam, it will be found of general utility in many other forms of beam, and the claims hereinafter made are not intended to be limited in their scope to trussed structures only.

In the manufacture of metal brake-beams, strength, lightness, stiffness, and resiliency are of the first importance, and to secure said advantages or characteristics it is now usual to employ hollow or tubular beams, and especially is this the case with trussed brake-beams wherein a camber is given to the compression member of the structure. The use, however, of tubular beams, (or compression members,) while affording in an eminent degree the advantages of strength, lightness, stiffness, and resiliency, is subject to the disadvantage of so reducing the bearing for the brake-head on the end of the beam as to lead ultimately to wear and lost motion, which, taken together with the stretch in the tension-rod in trussed beams, materially affects the stability of the structure, and in the case of trussed beams having a camber, wherein, in service, the resiliency and deflection of the beam tends to give rise to said wear and lost motion, in some measure allows the beam to give down or decrease in camber.

The object of the present invention is to overcome said disadvantages of the tubular-structure beam where the same is used in combination with brake-heads having cups or sockets for the reception of the ends of the beam, and this I accomplish by inserting within the ends of the beam cores or bushings which increase the end bearings for the brake-head and obviate wear on the ends of the tubular beam and consequent lost motion, and such a construction or its equivalent embodies the main feature of my invention.

A second feature of my invention resides in combining with the end of a tubular beam a bushing or core of slightly-tapering form, whereby when the brake-head is forced home on the end of the beam the bushing or core will firmly seat itself in the end of the pipe, and the wedging of the pipe in the head will take up any lost motion between the beam and head.

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 beam proper—in the present instance for illustration only—shown as the compression member of a cambered trussed beam, of which B is the strut or post, C the tension member, and D D brake-heads, the whole combined by the usual nuts *c c*, which also serve to put the camber in the beam.

The beam or element A is of tubular form, and at each end which carries a brake-head, said head having a cup or socket for the reception of the end of the beam or compression

member thereof, said beam is provided with a bushing or core 1, the combination of which with the hollow beam and socketed or cupped brake-head constitutes one feature of this invention.

The bushing or core 1, which preferably has the form of a short hollow cylinder tapering slightly, or with its greatest outer diameter slightly greater than the interior diameter of the tube which constitutes the beam, is also in case of a trussed beam channeled or grooved at diametrically opposite points at the opposite ends, as at 2 3, to permit of the passage of tension-rod C.

In that class of brake-beams where the member A is cylindrical and the brake-head D has a cup-cavity for the reception of the end of the beam, some means—for instance, a lug 4 within the cup-cavity of the head and a corresponding notch in the end of the beam—is employed to retain the head in proper relation to the beam, and in such cases the bushing or core 1 must be provided with a notch 5 or equivalent provision for the accommodation of said lug 4.

In fitting up the beam the bushing or core 1 is introduced into the open end of the beam, and may be at once driven home until its outer end is flush with the end of the pipe, but preferably it is allowed to project slightly, after which the head D is applied and the core forced home thereby until flush with the end of the tube, which latter will securely seat the bushing as well as take up any lost motion between the beam and brake-head. In case the beam is a trussed structure, the tension-rod C and nuts *c* can be utilized to force home the bushing or core and head, and at the same time any desired camber can be given the member A.

One of the advantages incident to my invention when applied to trussed beams is increased resiliency of the beam under high pressures and the avoidance of any "set" in the beam.

Having thus described the nature, object, operation, and advantages of my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with a hollow brake-beam and a brake-head having a cup or socket for the reception of the end of the beam, of a core or bushing within the end of the beam and which affords an increased bearing for the brake-head, substantially as and for the purposes specified.

2. The combination with a hollow brake-beam and a brake-head having a cup or socket for the reception of the end of the beam, of a tapering core or bushing within the end of the beam and which affords an increased bearing for the brake-head, substantially as and for the purposes specified.

3. The combination in a trussed brake-beam having a compression member, a tension member, and a brake-head on the end of the compression member, of a bushing or core within the end of the beam which affords an increased bearing for the brake-head, said bushing of tubular form and provided on its interior at opposite ends with channels or grooves to accommodate the tension-rod of the structure, substantially as and for the purposes specified.

4. A hollow bushing for the end of a tubular brake-beam, said bushing tapering in form and having in its interior at diametrically opposite points channels or seats, substantially as and for the purposes specified.

5. The combination with a hollow brake-beam of a core or bushing within the end of the beam, a brake-head, means for securing the same having an axial bearing on the beam; substantially as and for the purposes specified.

6. The combination with a hollow brake-beam of a tapering core or bushing arranged within the end thereof, a brake-head and means for securing the brake-head whereby an increased axial or end bearing on the beam is obtained; substantially as and for the purposes specified.

In testimony whereof I affix my signature, in presence of two witnesses, this 19th day of March, 1896.

HENRY B. ROBISCHUNG.

Witnesses:
E. B. LEIGH,
E. T. WALKER.