(No Model.)

H. B. ROBISCHUNG.

BRAKE BEAM.

No. 579,496. Patented Mar. 23, 1897.

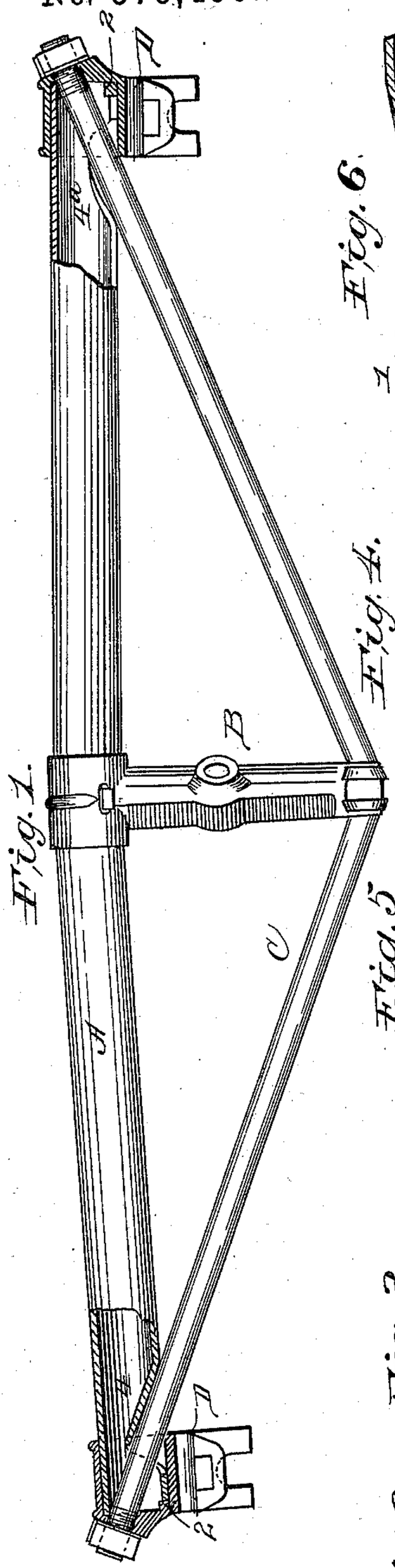

Fig. 1.

Fig. 6.

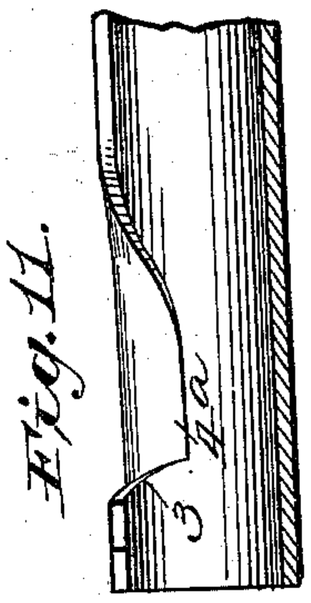

Fig. 11.

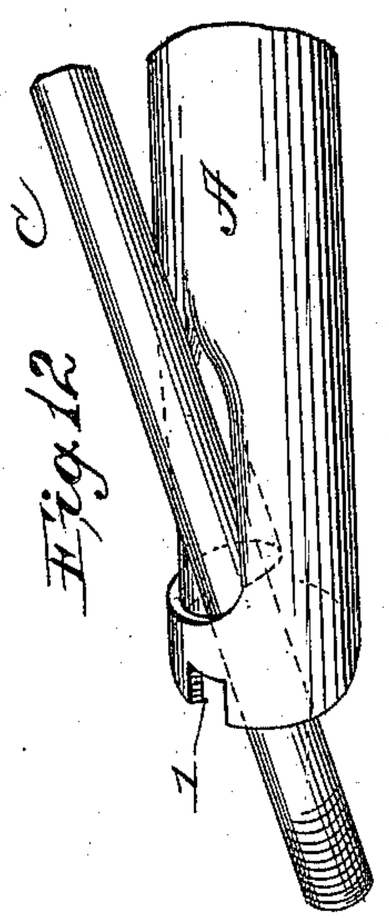

Fig. 12.

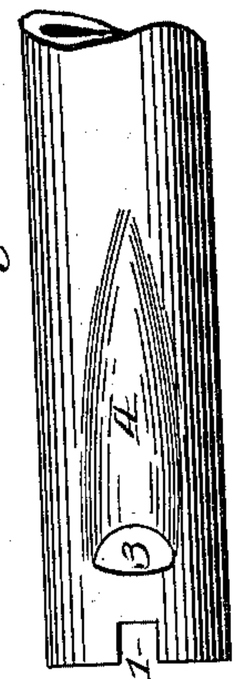

Fig. 4.

Fig. 5.

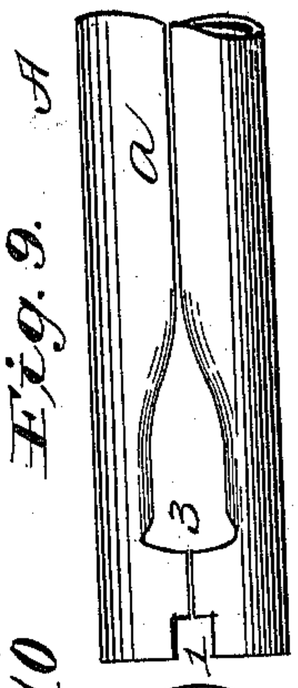

Fig. 9.

Fig. 10.

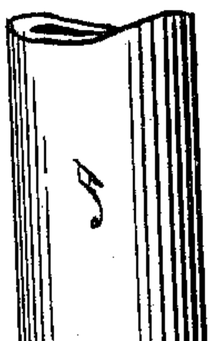

Fig. 13.

Fig. 14.

Fig. 7.

Fig. 8.

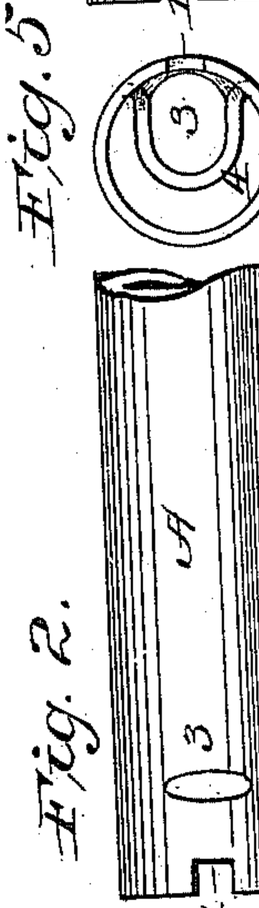

Fig. 3.

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UNITED STATES PATENT OFFICE.

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BRAKE-BEAM.

SPECIFICATION forming part of Letters Patent No. 579,496, dated March 23, 1897.

Application filed October 30, 1896. Serial No. 610,627. (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 plan view of a brake-beam embodying by invention, the ends thereof shown in section, that on the left hand showing the appearance of the beam where a welded tubular compression member is employed and the right-hand end showing the appearance of the parts where an open slotted compression member is used. Figs. 2 and 3 show the end of a welded tubular compression member after the same has been slotted for the passage of the end of the tension member and previous to forming the seat for the tension member. Figs. 4 and 5 show the end of a welded tubular compression member after the seat for the tension-rod has been formed therein. Fig. 6 is a longitudinal section of the end of the compression member shown in Fig. 4. Figs. 7 and 8 show the end of an open longitudinally-slotted compression member after it has been slotted for the passage of the end of the tension member and before the seat of the tension member has been formed. Figs. 9 and 10 show the end of an open slotted compression member after the seat or bearing for the tension member has been formed. Fig. 11 is a longitudinal sectional view of the end of the compression member shown in Fig. 9. Fig. 12 is a perspective view of the end of the compression member and the end of the tension member, showing their relative position in the trussed beam; and Figs. 13 and 14 are views of the ends of a compression member, illustrating modifications in the slotting thereof previous to the formation of the seat for the tension member of the trussed structure.

Like symbols refer to like parts wherever they occur.

In the construction of trussed brake-beams, for the sake of strength, stiffness, and resiliency with the minimum weight of metal, a tubular compression (or back) member has heretofore been employed. In order to obtain the benefit of the trussed structure, the tension member at its ends should enter or pass through the ends of the compression member, for which purpose the compression member employed has been either a welded tube slotted at its ends for the passage of the ends of the tension-rod or a longitudinally-slotted (or open-slot) tube, the slot of sufficient width adjacent to the ends of the compression member to permit the passage of the tension member. The brake-head used with such beams has been one having a cup-socket to receive the end of the beam, or, if an open socket, then an end or cap plate was employed to afford a bearing for the nut on the end of the tension member or equivalent means of combining the compression member, the brake-head, and the tension member.

The weak points of the structure, as they have developed in service, are twofold—viz., first, the tendency of the compression member to buckle at the weakest point and point of greatest strain—where it is slotted for the passage of the tension member—and the destructive wear on the tension rod or member owing to the limited or edge bearing of the tube on the tension member, the latter induced by the movement of the parts incident to the spring or deflection of the compression member when the brakes are applied and taken "off," and, second, the lost motion incident to wear on the end plate or cup-socket of the brake-head which arises from the limited end bearing in case of an open or longitudinally-slotted compression member or of a welded tubular compression member, if the tension-member slot be extended to the end of the beam, and incident to this last-named trouble is frequent loss of camber in the beam.

The object of my present invention is to obviate the difficulties above noted; and to this end the invention, generally stated, is embodied in a tubular compression member, whether the same be welded or longitudinally slotted, having adjacent to its end a transverse slot and a depressed seat for the tension member, whereby an increased end bearing for the brake-head or end plate and for the tension member is obtained.

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

I will now proceed to describe the preferred form of my invention more in detail, 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; C, the tension member, and D D the brake-heads of a trussed brake-beam.

The compression member A will be of tubular form, but whether a welded or closed tube or an open or longitudinally-slotted tube, as at *a*, is immaterial, except that in the latter case the edges of slot *a* are preferably in apposition throughout the length of the compression member, as thereby a nearer approach to the welded tube or typical compression member is secured.

The ends of the beam may be notched in the usual manner, as at 1, to receive a lug or projection 2 on the inside of the head D, or other known means may be adopted to prevent the rotation of the brake-head on the compression member and secure the desired "throw" or position of the brake-head in case the brake-head is to be fixed with relation to the compression member.

Just within the end of the tubular compression member and at the point where the end of the tension member C is to pass into and through the compression member I slot the beam transversely, as at 3, and while the form of said slot 3 is preferably oval or circular, and if oval with its long diameter transverse, as indicated in Figs. 2 and 7, yet said form is not essential, provided the area and general form of the slot will permit the passage of the tension member C. By so slotting the beam the circular end bearing of the beam (or seat for the brake-head or end plate) is preserved and thus end wear and lost motion obviated, and at the same time a passage for the end of the tension-rod is obtained.

After the tubular compression member has been slotted, as at 3, the body of metal adjacent to the margin or inner edge of the slot is forced out of the peripheral line of the member A, being preferably depressed or forced inward on an inclined plane corresponding with the angle of the tension member, and with its vertex toward the center of the compression member or toward the strut or post B. In the case of a closed or welded tubular compression member there will be produced a depression or tapering seat 4 for the tension member, and in case of an open or longitudinally slotted tube, if desired, the edges of the slot may be carried inward to form inturned flanges 4^a 4^a, (see Figs. 9, 10, and 11,) which afford broad side bearings for the tension member C.

In either case the form of the structure will not only strengthen or reinforce the compression member at the points where the tension member enters the same, but will obviate wear or channeling of the tension-rod and at the same time will preserve an almost, if not complete, circular end bearing for the bottom of the cup-socket of the brake-head or of the end plate, and thus minimize the wear and lost motion incident thereto in the whole structure.

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

1. A tubular compression member for trussed brake-beams, said member having slots adjacent to its ends for the passage of the ends of the tension member and the preservation of the end bearing of the compression member, and having the metal surrounding the inner edges of said slots turned from the periphery of the compression member to afford an increased bearing for said tension member; substantially as and for the purposes specified.

2. A tubular compression member for trussed brake-beams, said member having slots adjacent to its ends for the passage of the tension member, and extending from the inner margin of each of said slots a depression or tapering seat for the tension member, the vertex of said seat being toward the center of said compression member, substantially as and for the purposes specified.

3. A tubular brake-beam having an oval slot adjacent to its end the long diameter of the slot being transverse of the member, and an inclined depression to the inner side of said slot, substantially as and for the purposes specified.

4. In a brake-beam, the combination of a compression member, a strut or post, and a tension member, the compression member having slots adjacent to its ends for the passage of the tension member, and to the inner side of said slots provided with tapering depressions or seats for the tension member, the apices of said tapering seats being toward the strut or post; substantially as and for the purposes specified.

In testimony whereof I affix my signature, in presence of two witnesses, this 26th day of October, 1896.

HENRY B. ROBISCHUNG.

Witnesses:
F. W. RITTER, Jr.,
CARL F. GEYER.