

No. 729,487.

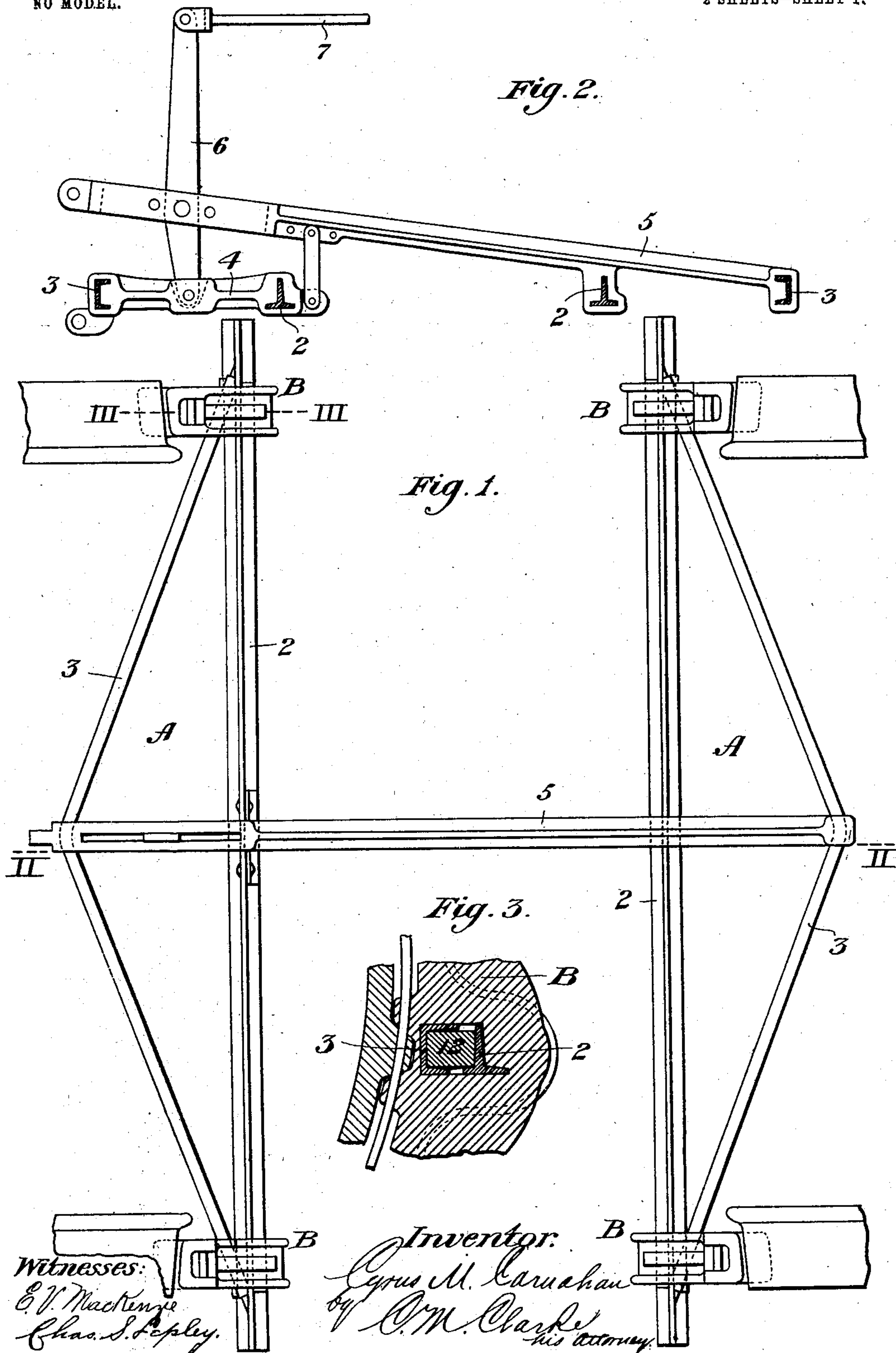
PATENTED MAY 26, 1903.

C. M. CARNAHAN.  
BRAKE BEAM.

APPLIOATION FILED JUNE 12, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



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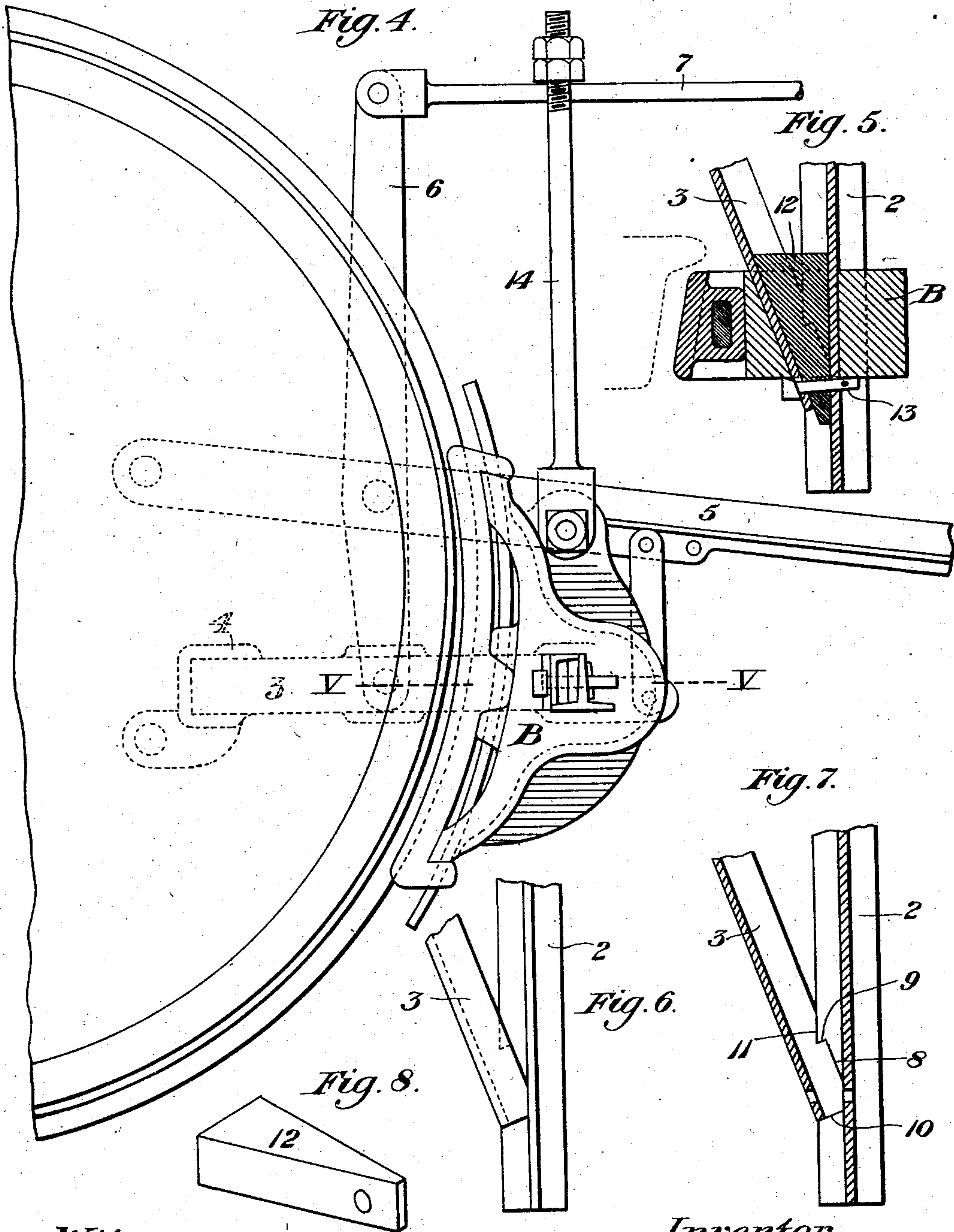
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*Witnesses:*  
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# UNITED STATES PATENT OFFICE.

CYRUS M. CARNAHAN, OF ALLEGHENY, PENNSYLVANIA.

## BRAKE-BEAM.

SPECIFICATION forming part of Letters Patent No. 729,487, dated May 26, 1903.

Application filed June 12, 1902. Serial No. 111,418. (No model.)

*To all whom it may concern:*

Be it known that I, CYRUS M. CARNAHAN, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Brake-Beams, of which the following is a specification, reference being had therein to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view showing two of my improved brake-beams, with their connecting and operating mechanism, together with portions of the car-wheels. Fig. 2 is a longitudinal sectional view on the line II II of Fig. 1. Fig. 3 is a cross-section on an enlarged scale on the line III III of Fig. 1. Fig. 4 is a view in side elevation showing the brake-beam provided with the brake-shoe and a portion of the supporting and operating mechanism mounted in relation to the car-wheel. Fig. 5 is a detail horizontal sectional view indicated by the line V V of Fig. 4, illustrating the construction and arrangement of the structural members of the beam and the manner of mounting and securing the brake-shoes. Fig. 6 is a detail plan view of the interfitting meeting ends of the main members of the beam. Fig. 7 is a sectional view, but showing the upper portion of such members removed, each being in horizontal cross-section about midway of their depth. Fig. 8 is a detail perspective view of the binding-wedge.

My invention relates to the class of brake-beams for railway and other brakes, and refers more particularly to the construction of the beam and to the manner of mounting the brake-shoe at each end thereof and of securing the different parts together.

The brake-beam is composed of a straight member 2, preferably of structural shape, as a T, and an outwardly-deflected or bowed member 3, preferably of structural shape, as a channel, both of which members pass through suitable openings or recesses in a central connecting brace or lever member 4, which may be of cast or wrought metal as desired and of any convenient form or design to provide a rigid connecting member adapted to hold the middle portions of the members 2 and 3 in fixed relation to each other. One or both of the members may have securing and center-

ing brackets at each side of the brace, as angle-pieces, as shown, or other means by which movement of the parts with relation to each other is prevented.

As shown in the drawings, the opposite beams, generally denominated by the letters A A, comprise a pair, and are maintained in operative relation to each other by the employment of the construction shown more fully in Figs. 1 and 2. One of the brake-beams A is carried by the brace 4, as already described, the opposite brake-beam A being mounted in and carried by a similar connecting brace 5, both braces being pivotally connected to an operating-lever 6, adapted to transmit movement to both brake-beams and their shoes through operation of the brake-rod 7. The last-described construction is more fully set forth in my prior application, bearing the Serial No. 87,181, and does not *per se* form any part of the present invention.

The outer member 3 of the brake-beam is bent or bowed inwardly toward the member 2 at each end, with which it contacts and interfits, as more clearly shown in Figs. 5, 6, and 7, one flange of the member 2 being cut out, as indicated at 8, providing oppositely-disposed shoulders 9 10, while the adjacent flange of the member 3 is similarly cut out, as at 11, so as to interfit and interlock with such cut-out recess in member 2. When the two members are so interfitted and clamped together by the surrounding brake-shoe and inner wedge, they are in firm and rigid engagement, and movement in either direction is positively prevented.

B is the brake-shoe, provided with a tapered opening, as shown, through which the connected ends of the composite beam extend, as shown in Fig. 5, and between the webs and flanges of members 2 and 3 is inserted the wedge-block 12, driven in tight and secured in position by a bolt 13, passing through the end of the wedge, and the webs of both members 2 and 3 being held in position by a cotter or other suitable device, by which construction the parts are secured and tightly held together.

The entire apparatus is suspended from any suitable portion of the truck by means of rods or links 14, attached to the tongue 15 of the brake-shoe, or any other suitable and



preferable supporting mechanism may be employed, and connection may, if desired, be made to the brake-beams themselves, and as so supported the entire structure will be maintained in alinement in proper relation to the wheel-peripheries. By reason of the comparatively rigid nature of the supported members and their connections with the brake-shoes it will be seen that each brake-shoe will be maintained in its proper relation to the periphery of the wheel irrespective of any tendency to fall away therefrom by gravity. This is an important and valuable feature of the invention, as by such construction the amount of movement of the brake-shoes to bring them into contact with the wheel is reduced to a minimum, as is also in consequence the necessary movement of the connecting-rod 7 and lever 6.

While I have shown the member 3 as being bowed outwardly and while good results are secured by such construction, it is obvious that such members may be made straight and the member 2 correspondingly bowed, or that both members may be bowed in diamond form, brought together at the ends, and connected with the brake-shoes in the same manner, and I do not therefore desire to be limited to the exact construction and arrangement of these members, nor do I desire to be limited to the specific cross-section shown and described, but to employ such other construction as may be convenient or suitable to the objects in view, as by using, for instance, two channels, I-beams, angle or other appropriate forms, or by combining different shapes for both members.

As shown, the ends of the beam extend considerably beyond the brake-shoe at each end, the purpose of which when used in certain designs of truck is to insure their coming into contact with the lower flange or other portion of the truck, thus preventing the brake-beam from falling upon the track if for any reason the supporting members should become broken or disengaged.

The entire structure is very simple, strong, compact, and composed of few parts, and such parts as are readily available in merchantable shape, thus reducing the cost of manufacture, assemblage, and erection to a minimum.

The brake-beam in its entirety constitutes a truss well adapted to the work of this class of apparatus, and it will be found to be very serviceable and efficient and will commend itself to all those familiar with the art.

Changes and variations may be made in the design or details of the various parts by the skilled mechanic without departing from the invention, and all such changes and variations are contemplated as within the scope of the following claims.

Having described my invention, what I claim is—

1. A brake-beam truss consisting of two structural members, separated at their middle portion and rigidly mounted in a central power-transmitting member, brought together and interlocked at their outer ends by interfitting shoulders and recesses made in the flanges of the members, and provided with brake-shoes.

2. A brake-beam truss consisting of two structural members separated at their middle portion and rigidly mounted in a central power-transmitting member, brought together and interlocked at their outer ends and provided with brake-shoes, with a wedge and securing-bolt at each end for connecting the ends and securing the brake-shoes thereon.

3. A brake-beam composed of a straight structural member, an outwardly-bowed structural member connected and interlocked with the straight member at its outer ends, separating wedges, transverse bolts for connecting the members together, and a middle brace member with means for holding the straight member in fixed relation to the brace member

4. In a brake-beam composed of two interlocking structural members meeting at an angle: the combination with such members of a brake-shoe mounted thereon, a separating-wedge, and a transverse securing-bolt.

5. A brake-beam truss consisting of two structural members, separated at their middle portion and rigidly mounted in a central power-transmitting member, brought together into interlocking engagement with each other at their outer ends and provided with brake-shoes, surrounding both members, with an inner wedge and a bolt passing through said members and the wedge and bearing against the brake-shoe.

6. A brake-beam truss consisting of two structural members separated at their middle portion and rigidly mounted in a central power-transmitting member, brought together at their outer ends, passed through brake-shoe bases, provided with binding-wedges and held together and in engagement with the brake-shoe bases and wedges by bolts passing through the ends of the structural members and wedges.

7. A brake-beam truss consisting of a straight T member, an outwardly-bowed channel member interlocking with the T member at its outer ends, brake-shoes mounted thereon, means for connecting the parts together, and a middle brace member.

In testimony whereof I affix my signature in presence of two witnesses.

CYRUS M. CARNAHAN.

Witnesses:

JAS. J. MCAFEE,  
C. M. CLARKE.