

(No Model.)

2 Sheets—Sheet 1.

H. C. BUHOUP.
BRAKE BEAM.

No. 534,627.

Patented Feb. 26, 1895.

Fig. 1.

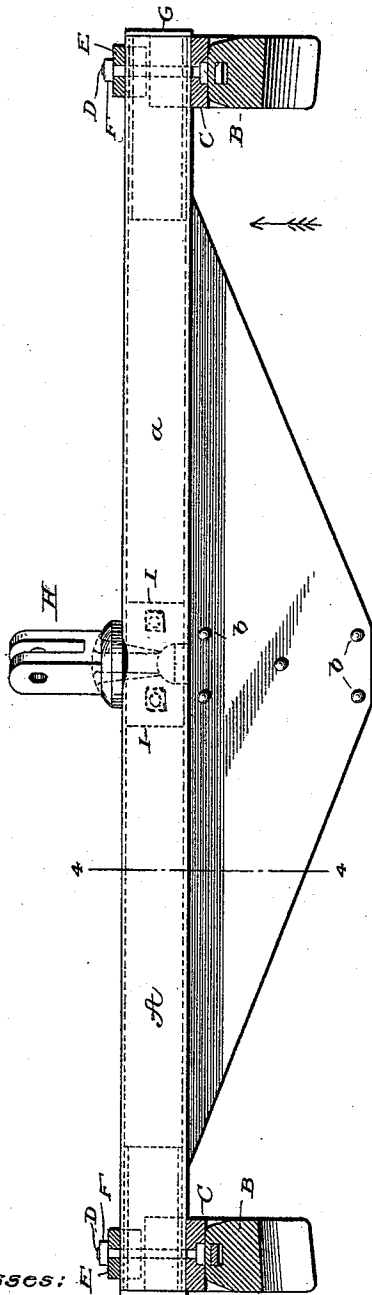


Fig. 2.

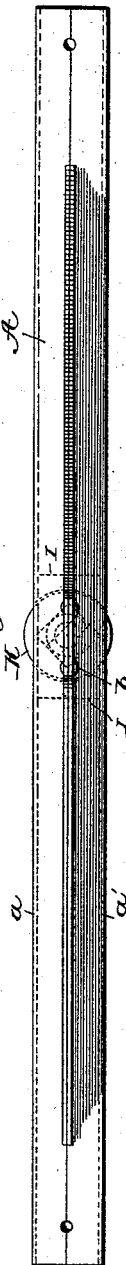


Fig. 6.

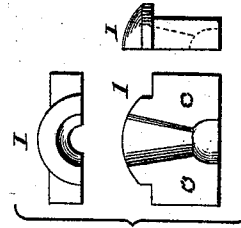


Fig. 3.

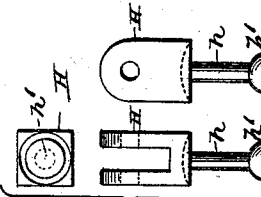
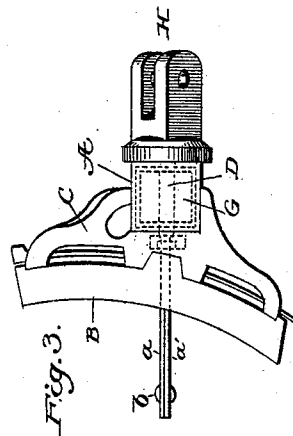


Fig. 4.



Fig. 3.



Witnesses:

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Wm. Dwyer

Inventor:

Harry C. Buhoup
by F. W. Ritter Jr
Atty.

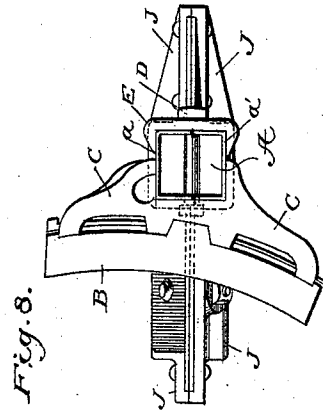
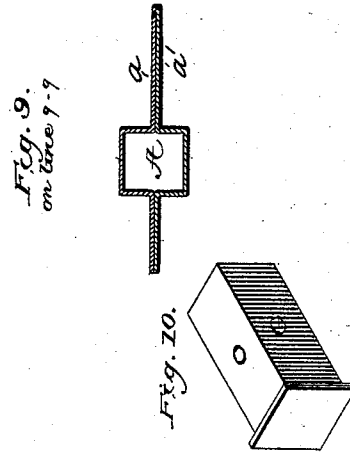
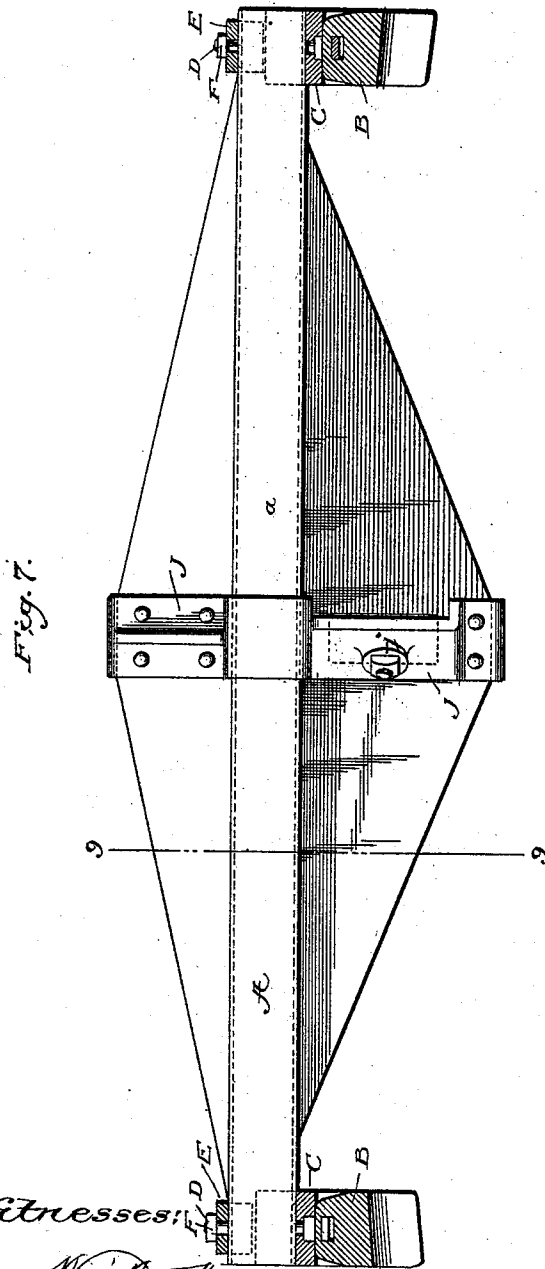
(No Model.)

2 Sheets—Sheet 2.

H. C. BUHOUP.
BRAKE BEAM.

No. 534,627.

Patented Feb. 26, 1895.



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Inventor:
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UNITED STATES PATENT OFFICE.

HARRY C. BUHOU, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE CHICAGO RAILWAY EQUIPMENT COMPANY, OF SAME PLACE.

BRAKE-BEAM.

SPECIFICATION forming part of Letters Patent No. 584,627, dated February 26, 1895.

Application filed July 16, 1894. Serial No. 617,732. (No model.)

To all whom it may concern:

Be it known that I, HARRY C. BUHOU, 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 of the same, reference being had to the accompanying drawings, in which—

Figure 1, is a plan view of a beam embodying my invention, with the brake-heads and brake-shoes attached thereto, in section. Fig. 2, is an elevation of the beam looking in the direction of the arrow Fig. 1, the brake-heads and brake-shoes removed. Fig. 3, is an end view of the beam. Fig. 4, is a transverse section of the beam on the line 4—4 Fig. 1. Figs. 5 and 6, are detail views of the devices for connecting the brake-lever to the beam. Fig. 7, is a plan view of a modification. Fig. 8, is an end view of said modification. Fig. 9, is a transverse section of the modified form of beam on the line 9—9 Fig. 7, and Fig. 10, is a detached view of the box for the ends of the beam.

Like letters refer to like parts wherever they occur.

My invention relates to the construction of metal brake-beams, and has for its several objects—first the production of a light, strong, and economical beam adapted for use with “standard” or common forms of brake-heads; and second to make such provision for the attachment of the brake-lever to the beam as will permit the beam to automatically adjust itself to any change in the relation of the brake-head and shoes to the wheel and thus avoid torsional strains on the brake-beam and brake-rigging.

Heretofore the construction of metal brake-beams, has in general been of a character to require a special form of brake-head, or else some intermediate means of attaching the brake-head to the beam, which entailed either additional expense, or loss by reason of the discarding of the standard-brake heads on hand. Furthermore the connection of the brake lever with the beam has been of a character to confine the use of the beam to either a right- or a left-hand lever, thus requiring the special construction of the beam, or the

carrying of a large stock of rights and lefts; and the connection between beam and brake lever has been such that the beam had little or no latitude of movement with relation to the brake-lever and wheels and so was at times and under certain well known conditions subject to undue and unnecessary torsional strains.

To obviate the first noted objection I form a beam from longitudinally flanged or trough-shaped sections of rectangular cross section, supported by a series of interposed reinforcing metallic shells or boxes, and a beam having such a construction embodies the first feature of my invention.

To obviate the second objection, and obtain the required latitude of movement between beam and brake lever, I provide the beam with a universal swivel or fulcrum post for the brake lever, said post or stem arranged to rock as well as rotate on the beam and a beam so provided embodies a second 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.

The beam proper A, is of general rectangular cross section (see Fig. 4) and is composed of two longitudinally flanged or trough-shaped rectangular sections, which, if desired, may be rendered more rigid by the laterally extending flanges $a a'$ on one or both sides (see Figs. 7 and 8), said sections being readily bent or pressed up from sheet metal or plate steel by means of suitable dies and presses or bending apparatus, and with comparatively little expense. If the laterally extending flanges $a a'$ are used I prefer that they should be cut back—or diminish in width gradually toward the ends of the beam, so as to give either a single (see Fig. 1) or double (see Fig. 7) trussed structure.

G, G indicate reinforce or end boxes, or metallic shells and I a center box interposed between the longitudinally flanged or trough-shaped sections to maintain the form against cross strains and bending and to stiffen the structure without materially increasing the weight of the beam; and while the end boxes

are of tubular form, the center box (see Fig. 6) is preferably composed of two sections having each a recess which when the box is closed form a socket for the swivel pin which corresponds to a combined hemisphere and truncated cone.

H indicates the lever fork having holes for the fulcrum pin of the brake lever, and a swivel stem *h* which terminates in a hemispherical head *h'*, which permits of the vibration or rocking of the lever fork as well as its rotation and said lever fork when swiveled in a block I having the construction hereinbefore specified will permit of a universal movement of the beam whereby it may accommodate itself to any change of relation between the brake-shoes and wheels. This construction also permits the beam to be used with either a right or left hand brake lever.

B indicates the brake-shoes and C the brake-head; the latter having the usual rectangular recess for the reception of the end of the beam A to which it may be secured by the usual bolt D and nut F.

The through bolt D will pass through the end boxes G, the brake-head G, and through a clamp plate E which has end flanges to embrace the beam A, as indicated by the dotted lines Fig. 1, and shown in full line Fig. 8, thus preventing the spread or spring of the two rectangular trough-shaped sections which compose the beam.

In case the lateral stiffening (or truss) flanges *a a'* are to be used on both sides of the beam (see Figs. 7 and 8) a different means of attaching the brake lever will have to be adopted, viz: transverse center plates J riveted or bolted to the beam and provided with an inclined slot and fulcrum pin *j* for the brake-lever—but in such case the beam will be only adapted to either a right or a left hand lever, and cannot be converted as in the preferred construction shown in Fig. 1.

These several sections and parts of the structure being of the general character hereinbefore specified, the beam is set up by assembling the parts as indicated in Fig. (or Fig. 7) of the drawings, that is to say, the stem *h* of the swivel fork H is inserted in the cavity of the center box I, and said box is arranged between the two longitudinal flanged sections at the center of the beam, the end boxes G, G are inserted in the ends of the structure, the brake-heads C, C are applied to the ends of the structure on the front, the flanged clamp plates E E are applied to the back of the structure at the rear, and the beam, end

boxes, brake-heads and clamp plates firmly secured together by the through bolts D, D, and nuts F, F, or in any other suitable manner. It will be noted that the longitudinally flanged sections composing the beam are thus sustained against buckling or bending at the ends by the inserted boxes G G, and rigidly united by the inclosing heads at the front and the flanged clamp plates at the back. If desired, in case the laterally extending flanges *a a'* are omitted the center may be secured (in the case of the construction shown in Fig. 1) by through bolts as indicated in dotted line (Figs. 1 and 6), but where the lateral truss or stiffening flanges *a a'* are employed they should be secured on the central lines of the beam by bolts or rivets *b b* which will be all that will be required and will avoid the necessity of weakening the beam by bolts at the points of greatest strain.

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

1. A metal brake-beam composed of two parallel rectangular trough shaped sections, and interposed center and end boxes, substantially as and for the purposes specified.

2. In a metal brake-beam, the combination with parallel trough shaped beam sections, of an interposed end box or shell, a recessed brake-head, a flanged clamp plate, and means for confining the parallel trough-shaped beam sections and interposed end box between the brake-head and clamp plate, substantially as and for the purposes specified.

3. The combination with a brake-beam, of a lever fork or fulcrum post having a universal joint connection with said beam, substantially as and for the purposes specified.

4. The combination with a brake-beam having a fork or fulcrum post socket in substantially the form of a combined truncated cone and hemisphere, of a fork or fulcrum post having a stem with ball head; substantially as and for the purposes specified.

5. In a brake-beam, the combination with longitudinally flanged beam sections, of an interposed divisible center box having a fork or fulcrum post socket, and a fork or fulcrum post swiveled in said center box; substantially as and for the purposes specified.

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

HARRY C. BUHoup.

Witnesses:

R. E. JANNEY,
DANIEL B. MASON.