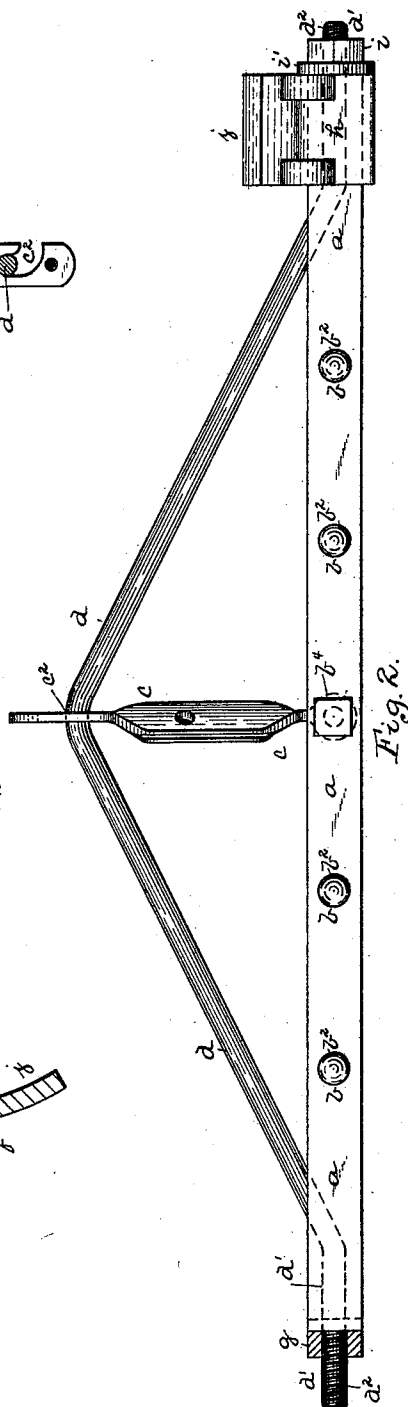
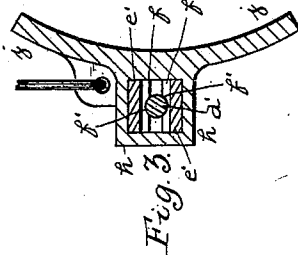
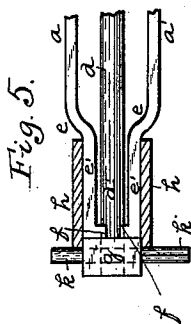
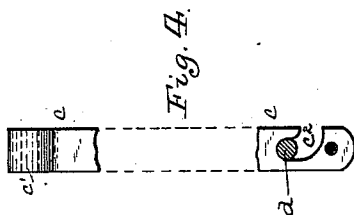
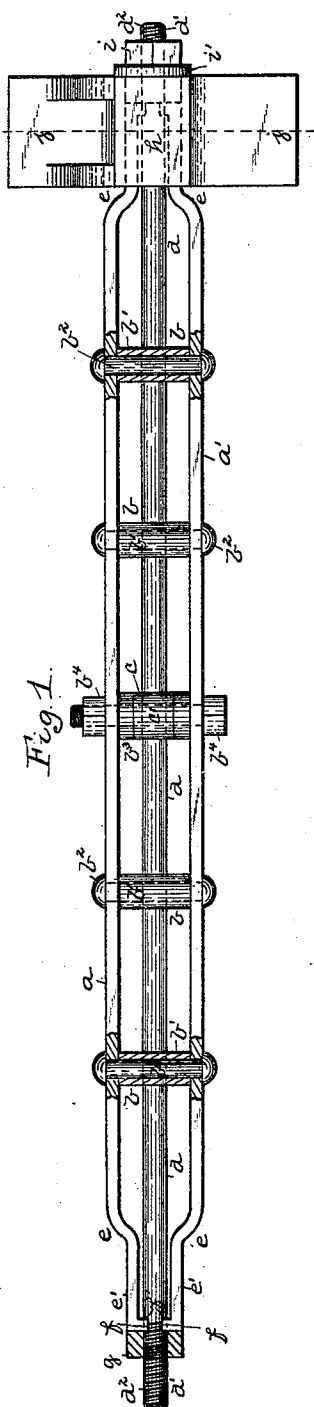


J. PEARCE.  
BRAKE BEAM.

Patented Jan. 19, 1892.



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# UNITED STATES PATENT OFFICE.

JAMES PEARCE, OF WILMERDING, ASSIGNOR OF FOUR-FIFTHS TO SAMUEL H. JOHNSON, OF PITTSBURG, CHRISTOPHER HORROCKS, OF WILMERDING, JOHN HORROCKS, OF MILLVALE, AND HENRY E. WEISKOPF, OF ALLEGHENY, PENNSYLVANIA.

## BRAKE-BEAM.

SPECIFICATION forming part of Letters Patent No. 467,234, dated January 19, 1892.

Application filed October 7, 1891. Serial No. 408,065. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES PEARCE, a resident of Wilmerding, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Brake-Beams; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to brake-beams, its object being to provide a brake-beam which is simple in construction, and yet one which possesses the necessary strength to withstand the severe strains to which it is subjected.

To these ends my invention consists, generally stated, in a brake-beam composed of two parallel bars connected by a series of cross-braces, a strut connecting the mid-points of said parallel bars to the mid-points of a suitable truss-rod, a sleeve engaging the ends of said parallel bars and truss-rod, and means for retaining the ends of said parallel bars and truss-rod therein.

It consists, further, in certain improvements and combinations of parts, all of which will be fully hereinafter set forth and claimed.

To enable others skilled in the art to make and use my invention, I will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a rear view of my improved brake-beam. Fig. 2 is a plan view. Fig. 3 is a section on the line 3 3, Fig. 1. Fig. 4 is a view of the strut removed, and Fig. 5 shows a different manner of forming shoulders on the truss-rod.

Like letters indicate like parts in each.

In the drawings,  $a a'$  represent two parallel bars which compose the brake-beam proper. These parallel bars may be formed of any suitable metal and may be of any convenient form in cross-section. The bars  $a a'$  are held together and securely connected by the series of cross-braces  $b$ , which prevent liability of the displacement of either of said bars under the great strains to which they are subjected. These cross-braces  $b$  may be of any suitable form; but for lightness of material as well as for strength I prefer to employ the form shown

in the drawings. The cross-braces illustrated consist of tubular sections  $b'$  of a suitable diameter and of a length to separate the bars at a proper distance. Bolts  $b^2$  pass through the several sections  $b'$  and through openings prepared for them in the bars  $a a'$  when the bolts are riveted or otherwise secured in place. A strut  $c$  connects the mid-point of the bars  $a a'$  so connected with the mid-point of the truss-rod  $d$ . This strut  $c$  is provided at the end with a ring  $c'$  or other connection adapted to engage the cross-brace  $b^3$  at the middle of the bars  $a a'$ . The said cross-brace  $b^3$  is provided with the nuts  $b^4$ , instead of being rigidly riveted, as in the case of the remaining cross-braces, in order that if it is desired to remove the strut  $c$  therefrom it may easily be accomplished. The opposite end of said strut  $c$  is provided with a recess or seat  $c^2$ , adapted to receive the mid-point of the truss-rod  $d$  and prevent said truss-rod from freeing itself therefrom. This form of construction of the strut  $c$  provides one which will securely connect the brake-beam to the truss-rod, and yet one which may be readily removed when desired.

The ends of the parallel bars  $a a'$  are set back to form the shoulders  $e$  and the contracted ends  $e'$ . The contracted ends  $e'$  are formed with the flanges  $f$ , said flanges having semicircular seats  $f'$  formed therein. The ends of the truss-rod  $d$  are set back, as at  $d'$ , on a line parallel with the contracted ends  $e'$  of the bars  $a a'$ . The ends  $d'$  of the truss-rod  $d$  are adapted to pass between the ends  $e'$  of the bars  $a a'$  and extend out beyond said ends  $e'$ , the semicircular seats  $f'$  together forming a circular opening, through which the ends  $d'$  of said truss-rod  $d$  pass. This circular opening formed by the conjunction of the semicircular seats  $f'$  in the flanges  $f$  acts to retain the ends of said truss-rod firmly in place. A nut  $g$  engages the threaded portions  $d^2$  of the ends  $d'$  of the truss-rod  $d$ , and said nut forms shoulders against which the ends of said parallel bars  $a a'$  abut. This nut  $g$  acts to receive any outward thrust on the part of the parallel bars  $a a'$ , and said nut may be

tightened up on said truss-rod to take up any play which the said bars or the truss-rod may have acquired in use.

In Fig. 5 I have illustrated a modified form of construction, in which a head *g*, corresponding to the nut designated by the same letter in the other figures of the drawings, is welded to the end of the truss-rod *d*, while the ends of the parallel bars *a a'* abut against said head *g*. The head *g* is constructed to extend beyond the end of the sleeve *h*, and a pin *k* may be inserted in an opening in said head to hold said sleeve in place. A sleeve *h* is adapted to inclose the ends of the bars *a a'*, its interior being of a size and shape to fit snugly around the said parts and lock them therein. A nut *i* or a cap of any convenient form is then secured to the end of the truss-rod *d* beyond the sleeve *h*. A washer *i'* may be interposed between said sleeve *h* and the nut *i*. The sleeve *h* may be formed from any suitable metal and may have the brake-shoe *j* cast integral therewith or otherwise secured thereto.

By the above construction I obtain a brake-beam equally braced along its entire length, so that all points are equally strong and capable of withstanding their share of the strains brought to bear upon the beam. The beam is also simple in construction and light, thereby providing the greatest strength for the least amount of material.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A brake-beam composed of two parallel bars connected by a series of cross-braces, a strut connecting said parallel bars to a truss-rod, a sleeve engaging the ends of said parallel bars and truss-rod, and means for retaining said sleeve in place, substantially as and for the purposes set forth.

2. A brake-beam composed of two parallel bars connected by a series of cross-braces, a strut connecting the mid-points of said parallel bars and a truss-rod, the contiguous faces of said parallel bars at or near the ends thereof having seats for the reception of the end of said truss-rod, a sleeve engaging the ends of said parallel bars and truss-rod, and means for retaining said sleeve in place, substantially as and for the purposes set forth.

3. A brake-beam composed of two parallel bars connected by a series of cross-braces, a strut connecting the mid-points of said parallel bars and a truss-rod, flanges formed on the ends of said parallel bars, seats in said flanges adapted to receive the end of said truss-rod, a sleeve engaging the ends of said parallel bars and said truss-rod, and means

for retaining said sleeve in place, substantially as and for the purposes set forth.

4. A brake-beam composed of two parallel bars connected by a series of cross-braces, a strut connecting the mid-points of said parallel bars and a truss-rod, shoulders on said truss rod against which the ends of said parallel bars abut, a sleeve engaging the ends of said parallel bars and truss-rod, and means for retaining said sleeve in place, substantially as and for the purposes set forth.

5. A brake-beam composed of two parallel bars connected by a series of cross-braces, a strut connecting the mid-points of said parallel bars and a truss-rod, a nut engaging said truss-rod and against which the ends of said parallel bars abut, a sleeve engaging the ends of said parallel bars and truss-rod, and means for retaining said sleeve in place, substantially as and for the purposes set forth.

6. A brake-beam composed of two parallel bars connected by a series of cross-braces, a strut connecting the mid-points of said parallel bars and a truss-rod, flanges formed on the ends of said parallel bars, seats in said flanges adapted to receive the end of said truss-rod, said truss-rod having shoulders thereon against which the ends of said parallel bars abut and said truss-rod extending beyond said parallel bars, a sleeve engaging the ends of said parallel bars and truss-rod, and a nut or equivalent device engaging the end of said truss-rod beyond the said sleeve, substantially as and for the purposes set forth.

7. The combination of two parallel bars connected by a series of cross-braces, a strut connected at one end to one of said cross-braces, the opposite end of said strut having a recess formed therein for the reception of the truss-rod, and a sleeve engaging the ends of said parallel bars and truss-rod, substantially as and for the purposes set forth.

8. The combination of two parallel bars, a series of tubular sections with bolts passing through the same and through openings in said parallel bars, said bolts being riveted or otherwise secured in place to connect said parallel bars, a strut connecting the mid-points of said parallel bars and a truss-rod, and a sleeve engaging the ends of said parallel bars and said truss-rod, and means for retaining said sleeve in place, substantially as and for the purposes set forth.

In testimony whereof I, the said JAMES PEARCE, have hereunto set my hand.

JAMES PEARCE.

Witnesses:

J. N. COOKE,  
JAMES I. KAY.