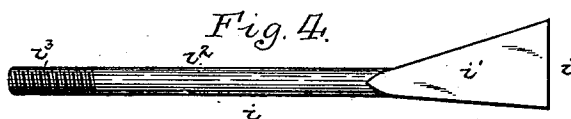
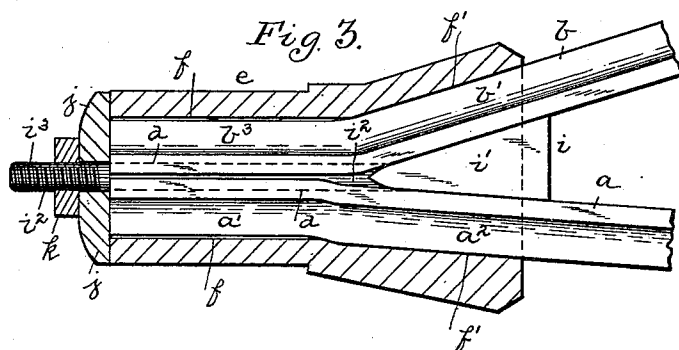
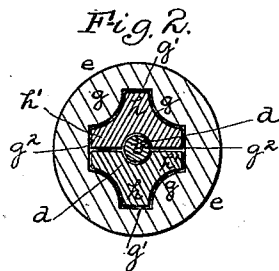
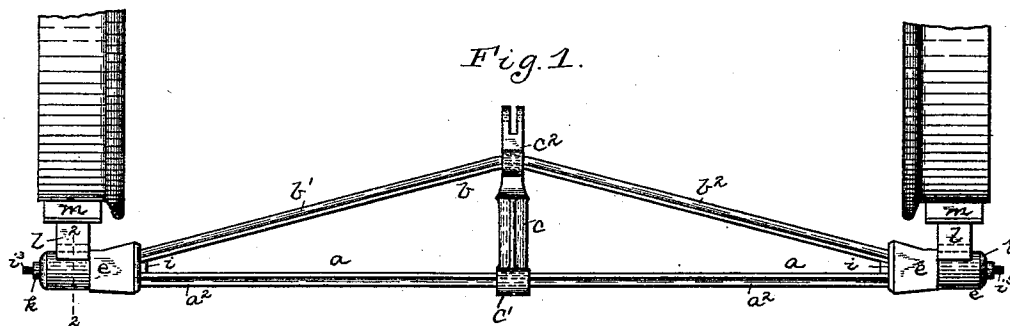


(No Model.)

J. P. HILLIARD.
BRAKE BEAM.

No. 466,078.

Patented Dec. 29, 1891.



Witnesses:

J. A. Cooney
R. D. Gutter

Inventor
Joseph P. Hilliard
By James D. May
attorney

UNITED STATES PATENT OFFICE

JOSEPH P. HILLIARD, OF ALLEGHENY, PENNSYLVANIA.

BRAKE-BEAM.

SPECIFICATION forming part of Letters Patent No. 466,078, dated December 29, 1891.

Application filed May 4, 1891. Serial No. 391,481. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH P. HILLIARD, a resident of Allegheny, 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, and more particularly to what are known in the art as "trussed" brake-beams—that is, brake-beams so braced that when they operate to force the brake-shoes into contact with the wheel the strain is not confined to the center of the beams, but is distributed over the entire length thereof.

The object of my invention is to dispense with the use of bolts in securing the ends of the rod to the brake-beam and to secure the truss-rod in such a manner as to always insure a rigid connection with the brake-beam.

To these ends my invention consists, generally stated, in a trussed brake-beam having the ends of the brake-beam and truss-rod incased in a suitable sleeve and a wedge-shaped key entering said sleeve between the ends of said brake-beam and truss-rod, thereby locking the ends of said brake-beam and truss-rod rigidly within said sleeve, and means for retaining said wedge-shaped key in position.

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 top view. Fig. 2 is an enlarged section on the line 2 2, Fig. 1. Fig. 3 is an enlarged top view of one of the ends, showing the casing in section. Fig. 4 is an enlarged view of the key.

Like letters of reference indicate like parts in each.

The brake-beam *a* and truss-rod *b* I prefer to form from T-bars, although any other shapes of angle-iron suitable for the purpose may be employed. A king-bolt *c* connects the mid-joints of the brake-beam *a* and truss-rod *b*, the brake-beam *a* passing through an opening in the head *c'* of said king-bolt, said opening corresponding in shape to the section of the brake-beam, and the truss-rod *b* passes through a similar opening in the inner end *c²* of said king-bolt. The truss-rod *b* is bent

to form the angular portions *b' b²*, the ends *b³* of said truss-rod for a suitable distance being set back on a straight line parallel with the ends *a'* of the brake-beam *a*. The portion *a²* of the brake-beam *a* between the straight ends *a'* is preferably slightly bent.

In the ends *a'* and *b³* of the brake-beam and truss-rod, respectively, are formed semicircular grooves, which when said ends are brought into juxtaposition unite to form the circular passage *d* between said ends.

The sleeve or box *e*, which incloses the ends *a' b³* of the brake-beam *a* and truss-rod *b*, may be cast in any suitable shape. The interior of said sleeve is formed with the seat *f*, with parallel walls for the reception of the parallel ends *a' b³* of the brake-beam and truss-rod, the said seat *f* widening out from its inner end to form the outwardly-flaring seat *f'*. This outwardly-flaring seat *f'* is formed to receive the portions of the brake-beam and truss-rod adjacent to the straight ends *a' b³*, it being apparent that since the truss-rod *b* enters said flaring seat *f'* at a greater angle than the brake-beam *a* the seat *f'* will have a greater flare on that side. Both the seats *f f'* are formed with the shoulders *g* extending from one end thereof to the other, said shoulders forming the guideways *g' g²* for the ready insertion of the parallel ends of the brake-beam and truss-rod, as will more fully appear. When the parallel ends *a' b³* of the brake-beam and truss-rod are inserted in the sleeve *e*, the web portions *h* of the said brake-beam and truss-rod enter the guideway *g'*, formed by the shoulders *g*, while the flanges *h'* enter the guideways *g²*. In this manner the parallel ends *a' b³* assume their positions within the seat *f'* of the sleeve *e*, the guideways *g²* being only wide enough to receive the flanges of the brake-beam *a* and truss-rod *b*, so that when in said guideway *g²* the faces of the flanges of the parallel ends *a' b³* of said brake-beam and truss-rod are brought into contact with each other, the semicircular grooves in said faces uniting to form the circular passage *d*. In like manner the portions of the brake-beam and truss-rod adjacent to the parallel ends *a' b³* assume their positions within the flaring seat *f'*, said flaring seat *f'*, as hereinbefore explained, being shaped to correspond to the

angles at which the brake-beams and truss-
rods enter said seat.

In order to lock the ends of the brake-
beam and truss-rod rigidly within the sleeve
5 *e*, a key *i* is employed, said key consisting of
the wedge-shaped head *i'* and the shank *i''*,
with the threads *i'''* formed on the end thereof.
This key *i* is inserted between the ends of
the brake-beam and truss-rod, the shank *i''* en-
10 tering the circular passage *d*, while the wedge-
shaped head *i'* enters the space between the
flanges of the brake-beam and truss-rod with-
in the flaring seat *f'*. The wedge-shaped
head *i'* corresponds in shape to the space in-
15 closed by the portions of the brake-beam
and truss-rod adjacent to the ends *a'* *b'* there-
of; consequently one face of said wedge-
shaped head *i'* is formed at a greater angle
than the other in order to coincide with the
20 greater angle of the truss-rod *b*. By driving
the key *i* farther into place the ends of the
brake-beam and truss-rod are locked rigidly
within the sleeve *e*. The shank *i''* of the key
i extends beyond the outer end of the sleeve
25 *e*, and upon said shank fits a cap *j* for clos-
ing the end of said sleeve *e*. A nut *k* engages
the threads *i'''* on the end of the shank *i''* just
beyond the cap *j*, which nut retains said key
in place and prevents its withdrawal, while
30 at the same time the faces of the wedge-
shaped head *i'* of said key of themselves lock
the ends of the brake-beam and truss-rod
rigidly in place.

The brake-block *l* for supporting the brake-
shoe *m* may be cast integral with the sleeve
35 *e*, thus avoiding the necessity of the use of
bolts in connection with my improved brake-
beam.

I am thus enabled to provide a brake-beam
40 so trussed that the truss-rod itself is capable
of performing as much work and of sustain-
ing as great strain as the brake-beam.

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

1. A brake-beam having a truss-rod con- 45
nected thereto, a sleeve engaging the parallel
ends of said brake-beam and truss-rod, a pas-
sage formed within the contiguous faces of
said parallel ends, and a key fitting therein
to lock said brake-beam and truss-rod within 50
said sleeve, substantially as and for the pur-
poses set forth.

2. A brake-beam having a truss-rod con-
nected thereto, a sleeve for the reception of
the parallel ends and the portions adjacent 55
thereto of said brake-beam and truss-rod, a
passage formed between the contiguous faces
of said parallel ends and a key having a shank
adapted to enter said passage, and a wedge-
shaped head adapted to engage the portions 60
of said brake-beam and truss-rod adjacent to
said parallel ends to lock said brake-beam and
truss-rod within said sleeve, substantially as
and for the purposes set forth.

3. A brake-beam having a truss-rod con- 65
nected thereto, a sleeve adapted to receive
the parallel ends and the portions adjacent
thereto of said brake-beam and truss-rod, a
passage formed between the contiguous faces
of said parallel ends, a key having a shank 70
adapted to enter said passage and a wedge-
shaped head on said key adapted to engage
the portions of said brake-beam and truss-
rod adjacent to said parallel ends, a cap en-
gaging with the outer end of said shank, and 75
a nut engaging with said shank to hold said
key in place, substantially as and for the
purposes set forth.

In testimony whereof I, the said JOSEPH P.
HILLIARD, have hereunto set my hand.

JOSEPH P. HILLIARD.

Witnesses:

J. N. COOKE,

ROBT. D. TOTTEN.