F. J. KIMBALL.

BRAKE BEAM AND SHOE.

No. 192,266. Patented June 19, 1877.

Fig. 1.

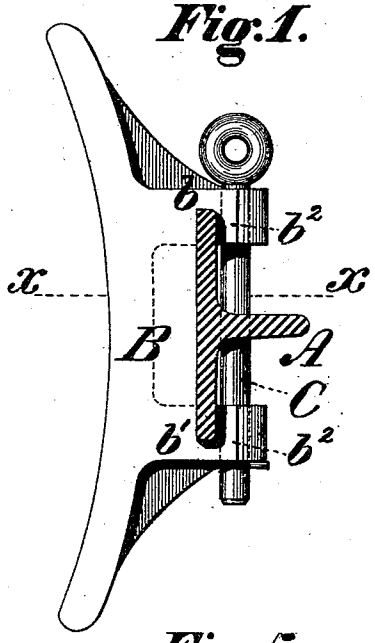



Fig. 2.

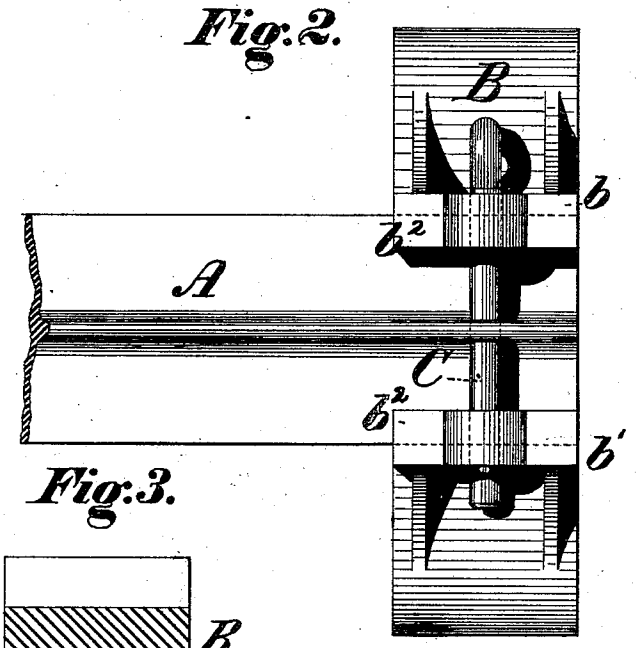



Fig. 3.

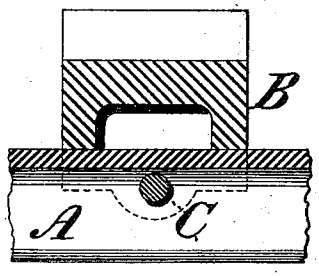



Fig. 5

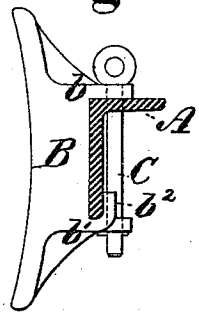



Fig. 4.

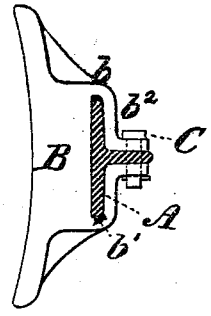
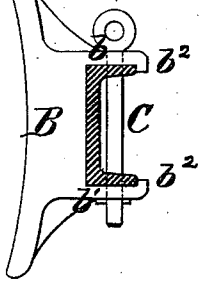



Fig. 6.




WITNESSES

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# UNITED STATES PATENT OFFICE.

FREDERICK J. KIMBALL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO EMPIRE TRANSPORTATION COMPANY, OF SAME PLACE.

## IMPROVEMENT IN BRAKE BEAMS AND SHOES.

Specification forming part of Letters Patent No. **192,266**, dated June 19, 1877; application filed April 9, 1877.

*To all whom it may concern:*

Be it known that I, FREDERICK J. KIMBALL, of the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Brake Beams and Shoes for Railroad-Cars, of which the following is a specification:

The object of my invention is to provide a substantial, durable, and economical brake-beam for railroad-cars, as well as an improved construction and mode of connection of the brake-shoes thereto; to which ends my improvements consist in a brake-beam formed from a rolled-iron beam or bar, of the description hereinafter described, and a brake-shoe, having projecting lips or flanges, and a pin or bolt, by which it is connected directly to a metallic brake-beam without the interposition of a brake-block, all as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a side view in elevation of a brake-shoe, and a transverse section of a brake-beam, embodying my improvements; Fig. 2 a rear elevation, and Fig. 3 a horizontal section, of the same at the line *x x* of Fig. 1. Figs. 4, 5, and 6 show different sections of beams, each having a suitably-formed shoe attached.

In the ordinary construction of railroad-car brakes the shoes or rubbers which are applied to the wheels are secured to brake-blocks of wood or metal, and these in turn to transverse beams of wood, which are hung to the truck-frames. The shoes and blocks have been made of different forms and materials, and devices of various descriptions have been proposed and made the subject of Letters Patent for effecting their connection with each other and with the brake-beams. All of these, so far as my knowledge extends, have involved the employment of numerous parts, and are expensive in their construction and maintenance.

Moreover, the wooden brake-beams heretofore employed are heavy, cumbersome, and perishable. My improvements are designed to reduce, as far as practicable, the weight, number, and cost of parts, while providing a substantial and efficient construction.

To carry out the objects of my invention I provide a brake-beam, A, formed of rolled metal, the transverse area of which is sufficient to sustain the strains brought upon it in the operation of braking, and which may be made of any suitable and convenient cross-section, provided the beam be of such character as to have one or more flanges or webs extending at a right angle from the body thereof, and in the direction of the strain to which the brake-beam is subjected. The rolled bar-iron herein shown, as applied to the required purpose, is of three kinds, viz., that known as T, as angle, and as channel bars, in each of which descriptions of bars the necessary element or elements are found.

Figs. 1 to 4, inclusive, show a brake-beam of T-iron, Fig. 5 of angle-iron, and Fig. 6 of channel-iron. It is obvious that the form of the beam may be varied at the discretion of the constructor, provided that the requirement above named be observed, the requisite strength of metal maintained, and that the metal be so disposed as to provide convenient facilities for the attachment of the shoes, as hereinafter to be explained.

The shoe B is, by preference, formed of cast-steel, or provided with a steeled rubbing-face, and its opposite face bears directly upon the brake-beam A, upon which it is held by upper and lower flanges $b$ $b^1$, between which the brake-beam fits, one or both of which flanges being provided with a lip, $b^2$, fitting against the back of the beam. The shoe is maintained is position longitudinally upon the beam by a pin or bolt, C, passing through its flanges or through lugs thereon, and also passing through the flange or flanges of the brake-beam.

The distance from the frictional surface of the shoe to the inner face of the beam against which it abuts should be sufficient to provide proper clearance for the wheel flange, and the shoe is preferably cored out or recessed, as shown in Figs. 1 and 3, for the purpose of reducing its weight.

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

1. As a new article of manufacture, a rolled-metal brake-beam for railroad-cars, the said beam having a flange or flanges standing from the body thereof in the direction of the strain

to which the beam is subjected, substantially as herein specified.

2. A brake-shoe having an inner bearing-face and upper and lower flanges, one or both of which are provided with a projecting lip for direct attachment to the brake-beam, and which are also perforated for the entrance of a connecting-pin, substantially as set forth.

3. The combination of a rolled-metal brake-beam, constructed as described, and a brake-shoe, attached directly thereto by upper and lower flanges, and a connecting-pin, passing through one or more of the flanges of the beam, substantially as set forth.

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Witnesses:
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