

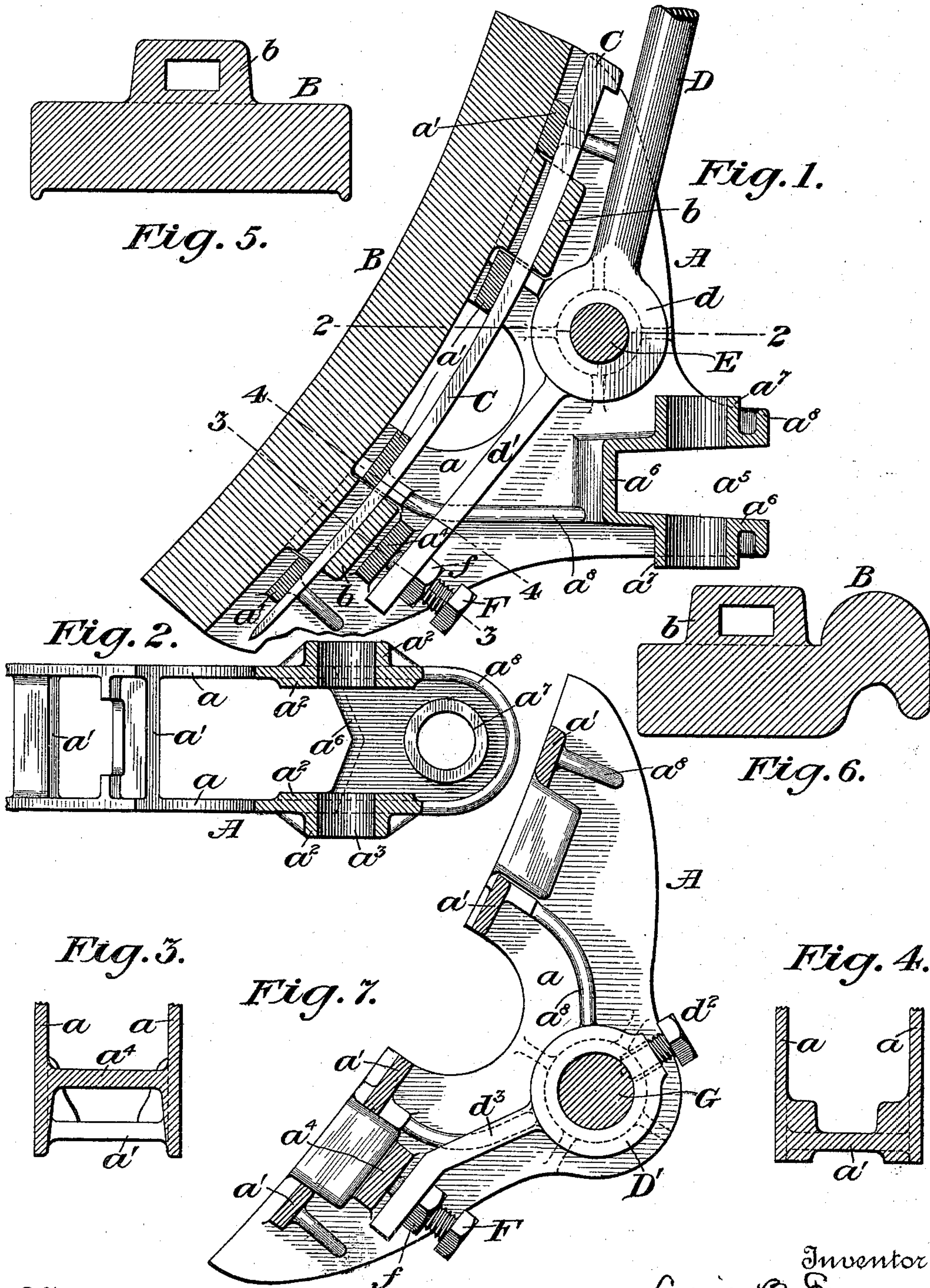
No. 638,229.

Patented Dec. 5, 1899.

L. B. FERGUSON.
BRAKE HEAD, SHOE, AND HANGER.

(Application filed Mar. 24, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

LOUIS BUCK FERGUSON, OF MERIDIAN, MISSISSIPPI.

BRAKE HEAD, SHOE, AND HANGER.

SPECIFICATION forming part of Letters Patent No. 638,229, dated December 5, 1899.

Application filed March 24, 1899. Serial No. 710,329. (No model.)

To all whom it may concern:

Be it known that I, LOUIS BUCK FERGUSON, a citizen of the United States, residing at Meridian, in the county of Lauderdale and State of Mississippi, have invented certain new and useful Improvements in Brake Heads, Shoes, and Hangers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in brake heads, shoes, and hangers for locomotive driving-wheels and for other wheels upon which brake-shoes of this class are generally used.

The special objects of the invention are to provide a brake head and shoe which is reversible for either right or left hand wheels or opposite sides of the same wheel and is capable of being rapidly and easily applied or removed. Double lugs on the shoe, closely fitting into suitable pockets or spaces in the head, reduce to a minimum the danger of losing the shoe when worn. The lugs are so spaced and the receiving-pockets so arranged that the head and shoe can be drawn together by a single key, so as to form practically one solid piece, no weakening of the parts being made necessary by the use of bolts to secure the head and shoe together. The adjusting of the shoe to the wheel is positive. By means of an arm projecting from the hanger or the brake-beam and provided with an adjusting-screw a simple and reliable adjustment is secured. Where the heads are suspended by a cross bar or beam connecting both heads, as is frequently the case for the front pair of driving-wheels in a locomotive, I provide a yoke to be secured upon the brake-beam and carrying an arm in which is located the adjusting-screw. The placing of the adjusting-screw in an arm below the point of suspension of the head relieves the screw of substantially all weight and insures a most reliable adjustment.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of a brake shoe and head and hanger embodying my in-

vention. Fig. 2 is a sectional plan view of the head on line 2 2, Fig. 1, omitting the wedge and hanger. Fig. 3 is a similar view on the line 3 3, Fig. 1, the adjusting-screw being omitted. Fig. 4 is a section on line 4 4, Fig. 1, omitting the wedge and hanger. Fig. 5 is a cross-section of a shoe for a plain tire. Fig. 6 is a cross-section of a shoe for a flanged tire, and Fig. 7 is a sectional elevation of a modified form of head and adjusting device.

The head A is a skeleton casting having two parallel cheek-pieces *a*, connected by cross-bars *a'*, and other members hereinafter mentioned. The front edges of the cheeks are curved to correspond with the periphery of the wheel and to afford a solid bearing for the back of the shoe B, whose back and face are similarly curved. The face of the shoe is suitably shaped to fit the wheel, being, for instance, flat, with narrow marginal ribs for a plain tire, as shown in Fig. 5, or grooved for a flanged tire, as shown in Fig. 6.

The upper cross-bar *a'* is preferably flush with the edges of the cheeks *a*, while the lower cross-bars are set back slightly, the recession increasing with each bar from the upper to the lower. On the back of the shoe are eyes or perforated lugs *b*, the perforations being arranged to lie in part back of the rear faces of the cross-bars *a'* when the shoe is in position. The lugs fit freely between two adjacent cross-bars, so that the shoe is thereby prevented from slipping lengthwise on the head.

A tapered curved wedge or key C passes down through the perforations in the lugs *b* behind the cross-bars *a'*, the rear faces of the bars and the lower faces of the perforations being surfaced to fit the key. The function of the curved key is to draw the shoe against the edges of the cheeks *a*, so that the shoe and the head form a firm and solid structure.

The hanger D has an eye *d*, which fits between the cheeks *a* and is secured by a pin or bolt E. The cheeks are suitably strengthened at these points, being preferably provided on the outside and inside with low flanges *a²*, surrounding the holes *a³* for the pin. The hanger has an arm *d'* extending below the eye *d*, preferably to a point behind the lower lug *b*. An adjusting-screw F here passes through the arm and bears against a

cross-bar a^4 . By turning the screw the relative positions of the hanger and the head can be altered. A lock-nut f secures the screw when the proper adjustment has been made.

- 5 The location of this adjusting-screw below the point of suspension and not far out of the vertical plane thereof results in relieving said screw of practically all the weight of the head, so that a more reliable adjustment is possible
10 and there is less liability of accidental disarrangement.

The head is provided with suitable means for connecting it with the brake rod or beam. In Fig. 1 the cheek-pieces are extended rear-
15 wardly and slotted out at a^5 to receive the end of the rod. Webs a^6 connect the cheeks around these slots, and preferably there are flanges a^7 surrounding bolt-holes in the upper and lower webs. Strengthening ribs and
20 flanges a^8 are also used wherever it is thought desirable.

It will be observed that the head is reversible side for side, so that it can be used on either side of the truck or on either side of a
25 wheel. It is preferred to so space the cross-bars and arrange the lugs on the shoe that the shoe can be reversed end for end and side for side in order that it may be changed when unevenly worn. Moreover, this reversibility
30 enables one pattern of shoe to serve for both sides of the truck and both sides of a wheel.

In the modification shown in Fig. 7 the cheeks are perforated transversely to receive a brake-beam G , and a yoke D' is fitted be-
35 tween the cheeks and secured on said beam by a set-screw d^2 . The adjusting-screw F is carried by an arm d^3 on the yoke.

This invention has given excellent service in practice and has the merit of simplicity,
40 strength, and adaptability in the lines pointed out above.

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

- 45 1. A skeleton brake-head, having two similar cheek-pieces, and cross-bars connecting said cheek-pieces, some of said cross-bars being set back from the front edge of the cheek-pieces, substantially as described.

- 50 2. A skeleton brake-head, having two similar cheek-pieces, and cross-bars connecting said cheek-pieces, some of said cross-bars be-

ing set back from the front edge of the cheek-pieces, the recession increasing from the upper to the lower cross-bar, substantially as
55 described.

3. A skeleton brake-head, having two similar cheek-pieces, and cross-bars connecting said cheek-pieces, pairs of said cross-bars being spaced at equal distances apart, whereby
60 a shoe having similar lugs can be applied to said head either end uppermost, substantially as described.

4. The combination with a skeleton brake-head, having two similar cheek-pieces and
65 cross-bars connecting said cheek-pieces, of a brake-shoe having perforated lugs fitting between pairs of adjacent bars, and a key adapted to pass through said lugs in the rear of the cross-bars, substantially as described. 70

5. The combination with a skeleton brake-head, having cheek-pieces connected by cross-bars having their rear faces lying in the same line, of a brake-shoe having perforated lugs
75 fitting between pairs of adjacent bars, and a key adapted to pass through said lugs and bear against all of said cross-bars, substantially as described.

6. The combination with a brake-shoe having similar perforated lugs on its back, of a
80 brake-head having cheek-pieces connected by cross-bars spaced equidistantly in pairs, the space between the bars in each pair being the same as the length of the lugs, whereby said shoe can be placed upon the head with either
85 end uppermost, substantially as described.

7. The combination with a skeleton brake-head having two similar cheek-pieces provided with transverse holes, of a brake-beam
90 attached to the head by passing transversely through said holes, a yoke fitting on said beam between the cheek-pieces and having an arm projecting down in the rear of the head, a set-screw for securing the yoke to the
95 beam adjustably, and an adjusting-screw carried by the arm and bearing against the head, substantially as described.

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

LOUIS BUCK FERGUSON.

Witnesses:

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