No. 658,856. Patented Oct. 2, 1900.

T. W. MITCHELL.

BRAKE SHOE.

(Application filed Feb. 28, 1900.)

(No Model.)

Fig. 1.

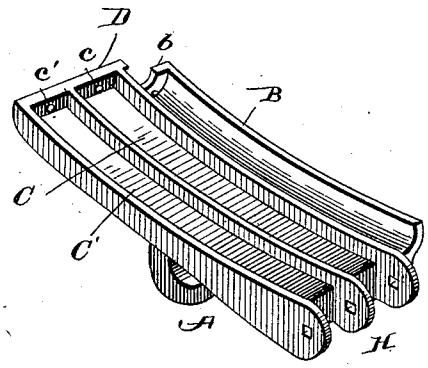


Fig. 2

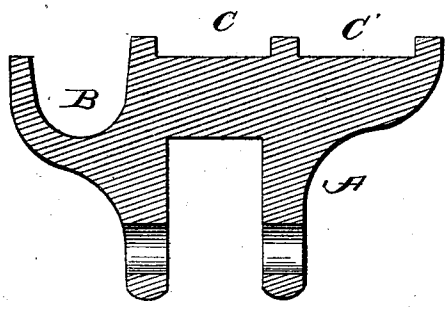


Fig. 3

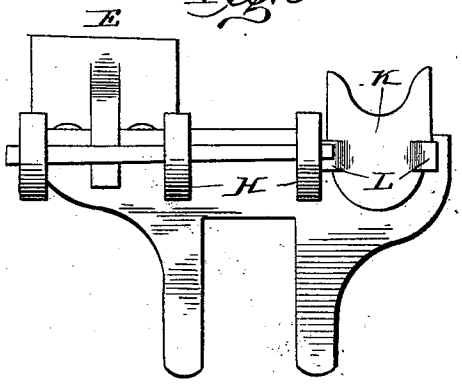
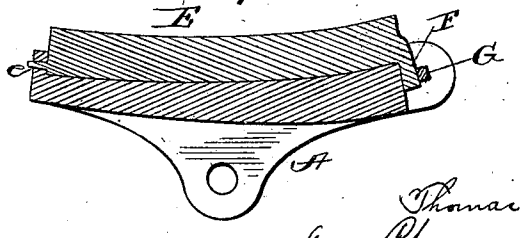


Fig. 4.



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UNITED STATES PATENT OFFICE.

THOMAS W. MITCHELL, OF SOUTH OMAHA, NEBRASKA.

BRAKE-SHOE.

SPECIFICATION forming part of Letters Patent No. 658,856, dated October 2, 1900.

Application filed February 28, 1900. Serial No. 6,871. (No model.)

To all whom it may concern:

Be it known that I, THOMAS W. MITCHELL, a citizen of the United States, residing at South Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Brake-Shoes; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

This invention relates to improvements in brake-shoes such as are designed for use in connection with railway rolling-stock; and it has for its objects to provide a brake-shoe in which there will be the minimum amount of wastage in the form of scrap when the wear surfaces or blocks are worn away so as to require renewal, a further object of the invention being to provide a brake-shoe which will maintain the wheel in its true form by wearing away those portions of the wheel which are normally not worn away by contact with the head of the rail and at the same time to make provision for wear-surfaces which will contact with the whole of the face of the wheel transversely or with those portions which do not contact with the rail exclusively or exclusively with those portions which do contact with the rail, whereby in normal use the wheel may be maintained in its true form or shape, as before indicated; but in case it should be found that a flat has been formed in the tread of the wheel by sliding or otherwise then that portion of the wheel may be worn down and the wheel trued up by the brake-shoe without requiring the removal and turning down of the entire wheel-face.

A still further object of the invention is to produce a shoe in which the wearing portions may be made of cast or wrought iron or drop-forged steel as cheaply as the present shoe of cast iron or steel can be produced.

To these ends the invention consists, primarily, in a brake-shoe having a series of longitudinally-extending independently-removable wear-blocks, any one or more of which may be utilized independently of the others, and whereby by omitting one or more of said blocks the wear on the wheel may be restricted to those portions not worn through other causes.

Further, the invention consists in certain novel details of constructions and combinations and arrangements of parts, all as will be now described, and pointed out particularly in the appended claims.

Referring to the accompanying drawings, Figure 1 is a perspective view of the brake-shoe body or base constructed in accordance with my present invention. Fig. 2 is a cross-sectional view of the same. Fig. 3 is an end elevation looking at the right-hand end of Fig. 1, with two wear-blocks in position, the arrangement being such as to prevent wear on that portion of the wheel which contacts with the rail. Fig. 4 is a longitudinal section on a reduced scale, taken centrally of the tread wear-block shown in Fig. 3 and illustrating the preferred manner of holding the wear-blocks in place.

Like letters of reference in the several figures indicate the same parts.

The body or base of the brake-shoe when constructed in accordance with my present invention may have any of the usual or preferred projections or flanges upon its rear face or side for the attachment to the brake-beam—such, for instance, as the ears A—while the face of the body portion is formed with a series of longitudinal seats roughly conforming to the general contour outlines of the tread of the wheel—that is to say, there are a transversely and longitudinally curved seat B, adapted to receive a wear-block for coöperating with the flange of the wheel, and two longitudinally-curved seats C C′, adapted to receive wear-blocks for contacting with the tread of the wheel, one of such wear-blocks being in position to contact with the tread adjacent the flange and the other at a point near the outer edge of the tread or at a point where the said tread does not normally contact with the rail.

As before stated, the primary object is to provide a structure wherein wear-blocks may be employed and be readily removed or applied independently, so as to secure an action on the wheels in accordance with the wear developed thereon in use, and it is obvious that when the idea of employing a series of longitudinally-arranged parallel and independent wear-blocks has been suggested many means will at once suggest themselves for holding such wear-blocks in place, so as

to be capable of ready removal or application, and in the accompanying drawings I have illustrated one simple and novel means for accomplishing this end.

If reference be had to Fig. 1, it will be seen that at one end each of the seats is provided with an end flange *b*, *c*, and *c'*, respectively. This end of the brake-shoe is intended to be the lower end, and the flanges are designed for preventing the wear-blocks from being moved longitudinally out of their seats, and to prevent them from moving inwardly or toward the wheel each of said wear-blocks is provided with a pin or projection adapted to enter an aperture or recess D in the end flanges, as shown, for instance, in Fig. 4, wherein E indicates the wear-blocks, and *e* the pin referred to. At the opposite end of the base said wear-blocks are preferably provided with ears or projections F, which extend down over the end of the base or body and are adapted to be held by a transverse pin G, located in suitable apertures in end extensions H of the side flanges of the seats. The projections F may be somewhat larger at their ends in order to prevent the blocks from moving inwardly out of the seats, as will be readily understood from an inspection of Fig. 4, and in order that the same pin may be utilized for retaining all of the wear-blocks in place the flange wear-block K is provided with lugs or projections L at each side, over one of which the end of the pin will project, as shown clearly in Fig. 3. A lug L is preferably provided on both sides of the end of the wear-block K, thus adapting said wear-block for use either in a right or left handed body or base, while the wear-blocks E, it will be understood, are duplicates and will serve for either right or left hand bodies or bases.

In use now under normal conditions two wear-blocks are employed, as illustrated in Fig. 3, one for contacting with the flange of the wheel and the other for contacting with the tread of the wheel outside of that portion which contacts with the rail, and usually the wear of the brake-shoe will about equal the wear of the rail, and hence the wheel will maintain its true form until its usefulness has past; but under some conditions—as, for instance, where the wheel has slipped on the rail—a flat place may be formed therein, and when this occurs a wear-block may be placed in the seat C. This wear-block will contact with that portion of the wheel in which the flat has been formed and will consequently true up that portion of the wheel without the necessity of removing the wheel and turning or grinding the entire surface. Obviously a grinding wear block or blocks or a wear block or blocks having abrasive substances therein may be utilized under such circumstances. On the other hand, should it be desired, wear-blocks may be utilized in all of the sockets and some made harder or softer than others, so as to equalize the wear upon the wheel in this way, and by the employment of a series of wear-blocks any one or more of them may be quickly removed and a new one substituted either to secure additional wear upon the wheel at any desired point or when their usefulness has passed. Obviously the wear-blocks may be worn down until there is practically no metal remaining and then may be removed and new ones substituted. Thus there is little or no waste in the form of scrap metal, and instead of throwing away or having to remelt a large body of metal, as heretofore, by the present invention a great economy is effected.

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

1. A brake-shoe embodying a plurality of longitudinally-arranged independently-removable wear-blocks for coöperating with different portions of the surface of the wheel; substantially as described.

2. A brake-shoe embodying a base having independent longitudinally-arranged seats therein and a plurality of independent wear-blocks removably mounted in said seats and adapted to coöperate with different portions of the surface of the wheel, whereby wear may be equalized, substantially as described.

3. A brake-shoe embodying a removable wear-block having its surface grooved to fit the wheel-flange and an independent removable wear-block conforming to a portion of the wheel-tread; substantially as described.

4. A brake-shoe embodying a removable wear-plate grooved to conform to the wheel-flange, and an independent removable wear-block conforming to the side of the tread removed from the flange whereby the portion of the tread subjected to rail wear is not subjected to brake wear; substantially as described.

5. A brake-shoe embodying a base having a seat at one edge curved transversely to conform to the wheel-flange and independent seats conforming to the wheel-tread, and similarly-formed independent wear-blocks removably mounted in said seats and adapted to cooperate with the flange and tread respectively; substantially as described.

6. In a brake-shoe, a base having independent longitudinal seats with a flange closing said seats at one end and projections at the opposite end of said base combined with independent wear-blocks removably mounted in said seats and having projections at one end coöperating with the end flanges of the seats and projections at the opposite end and a pin passing through the projections on the base and coöperating with the projections on the wear-blocks to hold all said blocks in place; substantially as described.

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