(No Model.)

G. H. POOR.

BRAKE SHOE.

No. 346,825. Patented Aug. 3, 1886.

Fig. 2.

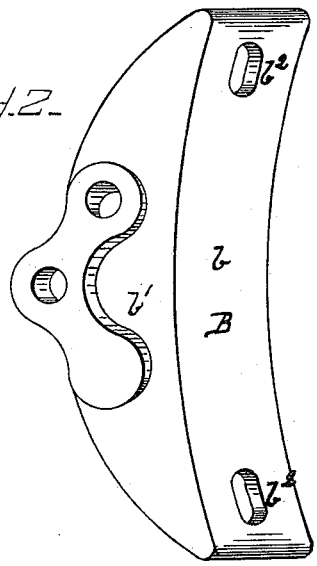
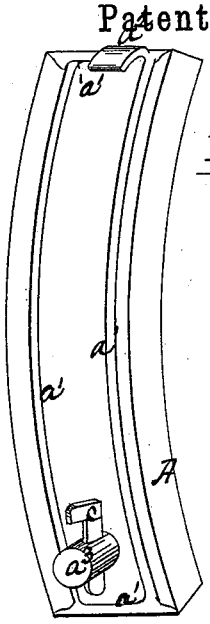


Fig. 1.



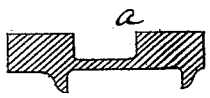
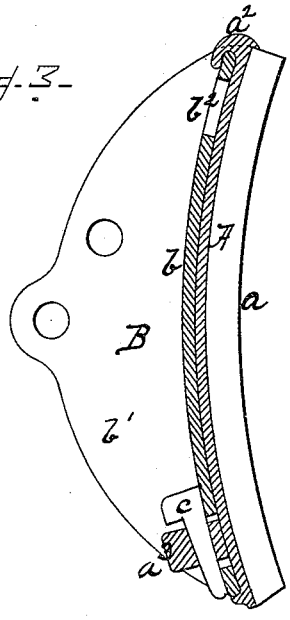


Fig. 3.



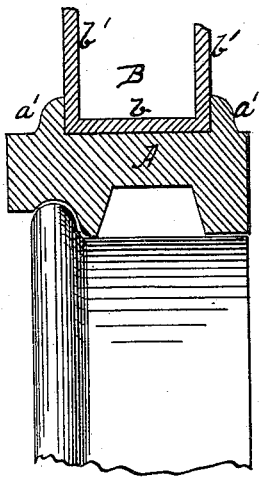


Fig. 4.

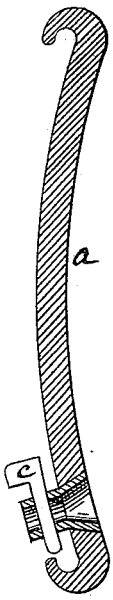


Fig. 5.

Witnesses.
G. A. Tauberschmidt
F. P. Metzger

Inventor.
George H. Poor
by F. W. Ritter & Patty

UNITED STATES PATENT OFFICE.

GEORGE H. POOR, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE AMERICAN BRAKE COMPANY, OF SAME PLACE.

BRAKE-SHOE.

SPECIFICATION forming part of Letters Patent No. 346,825, dated August 3, 1886.

Application filed January 22, 1886. Serial No. 189,388. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. POOR, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Brake-Shoes; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, wherein—

Figure 1 is a rear perspective view of a shoe embodying my invention. Fig. 2 is a detached view of the brake-head. Fig. 3 is a longitudinal section of the combined shoe and head. Fig. 4 is a transverse section of a shoe and head embodying the invention in a modified form; and Fig. 5 is a longitudinal section of a shoe, showing the hollow bolt.

Like letters refer to like parts wherever they occur.

Before proceeding to describe my invention I would first call attention in a general way to the present state of the art, as well as the problems to be solved in producing a practicable, profitable, and acceptable shoe, as by considering the same the value and importance of certain changes which otherwise might be considered trivial will more fully appear.

Brake-shoes as now generally constructed are made of both wrought-iron and cast; but forms which are adapted to the construction of wrought-iron shoes are in most, if not all, instances not adapted for the manufacture of cast shoes. Again, the construction of many, if not all, of the present forms of brake-shoes is such as to compel the manufacturer and dealer to keep in stock both rights and lefts of all forms of shoes.

The duration or life of a brake-shoe may be stated as from one to six months; average life, say, three months. If, now, the number of brake-shoes required to supply the railroads of the country be considered, as well as the uncertainty as to whether the largest demand in any given period will be for rights or lefts, it will be at once apparent that the manufacturer must carry in stock two forms of shoes, and an unnecessarily large amount of capital is locked up. If, now, a perfectly practicable reversible shoe is obtained—one which can be used right and left alternately, and can be formed of either wrought or cast metal, as desired—the problem will be solved, whereby cost of patterns, &c., and also capital locked up, will be reduced greatly.

The object of the present invention is to accomplish this in the simplest and most effective manner.

I am aware that heretofore shoes have been constructed with end flanges and hooks, to prevent the stripping of the shoe from the head, and have been bound to the head by lugs or bolts and cotters, which lugs or bolts have prevented the lateral displacement of the shoe.

While I employ devices of such general character, I do not herein broadly claim the same, as at present existing they are not adapted to a shoe of both wrought and cast metal, or a shoe of general application as a right and left.

I will now proceed to describe my invention more specifically, so that its characteristic features will appear, and so that others skilled in the art may apply the invention.

In the drawings, A indicates the shoe, and B the brake-head. The shoe A will have its face *a* on the arc of a circle to correspond with the diameter of the wheels with which it is to be used, while its back will be on an arc of a circle to correspond with the brake-head. The face of the shoe may be of any well-known or approved form; but in the present instance it is shown in Fig. 1 as having a longitudinal groove to relieve the tread of the wheel from wear, and in Fig. 4 as having a flange-groove to embrace the flange, which form has been chosen because the construction of the shoe hereinafter specified has peculiar advantages where the face of the shoe is of peculiar form. I would here say that by this means the shoe may be given a wide range of utility, specially adapting it for use on locomotive-brakes. On the back of the shoe is a continuous rib, *a'*, or boundary ridge, which is the preferable form, though the same may be limited to the ends of the shoe, if desired, as the stripping strain is the greatest. When used on the side edges, they will relieve the bolt and hook hereinafter referred to of strain, and prevent lateral movement of the shoe, which, though not great in the ordinary form of shoe-face, is very material where the face of the shoe has a flange-

groove or its equivalent. In any case they form an effective seat for the brake-head and facilitate the fitting of the shoe. At one end of the shoe, at the back thereof, is a hook, a^2, adapted to take over the web of the brake-head, and adjacent to the opposite end of the shoe is a bolt, a^3, or projection of equivalent length, having a hole for the reception of a key or cotter.

B indicates a brake-head, having the web b and flanges b', for attachment to the beam or hanger, as the case may be.

It will be evident that by making the bearing-face of web b on a compromise arc, and adapting the arc of the back of the shoe thereto, a wide range of wheels can be served by a few patterns of shoes, as before pointed out. The web b of the brake-head is slotted at two or more points, b^2, equal or substantially equal distances from the corresponding end of the head, and such distance corresponds to the distance from the bolt or projection a^3 to the end of the shoe or adjacent end rib, a', which slots are preferably elongated, as shown, to insure a free passage of the lug or bolt a^3 of the shoe. In cast shoes the lug or bolt a^3 will of course be cast integral with the shoe; but in case of wrought-metal shoes I prefer to make it separate, and as dissimilar metals are employed I reduce the weight, cost of manufacture, and liability of cutting, or, in event the bolt is or wears flush with the face of the shoe, reduce its grinding or cutting surface by making the bolt in the form of a funnel, or with hollow tapering head, and countersink it in the face of the shoe, as shown in Fig. 5.

A shoe of the character hereinbefore described may be applied to the brake-head either as a right or left hand shoe, front or rear, by reversing the shoe, so that the hook a^2 will take over the web b above or below, as the case may be, when the bolt or projection a^3 will enter either the upper or lower hole, and a key or cotter, c, may then be inserted in the hole of the projection in the usual manner.

Having thus set forth the nature and advantages of my invention, what I claim, and desire to secure by Letters Patent, is—

1. A brake-shoe having a raised border rib, a curved hook at one end, and a bolt or projection adjacent to its opposite end and within the border rib, substantially as and for the purposes hereinbefore set forth.

2. The combination, with a brake-shoe having end ribs, a hook at one end, and a bolt adjacent to the opposite end and within the transverse edge rib, of a brake-head whose web has two elongated slots, one near each end, at a distance from the end corresponding to the distance of the bolt from the end of the shoe, substantially as and for the purposes specified.

3. The combination, with a brake-shoe, of a hollow tapering countersunk T-bolt of dissimilar metal, substantially as and for the purposes specified.

4. A brake-shoe having a flange-groove on its face and longitudinal brace-ribs on its back, substantially as and for the purposes specified.

In testimony whereof I affix my signature, in presence of two witnesses, this 2d day of January, 1886.

GEORGE H. POOR.

Witnesses:
HENRY A. WAPLERT,
E. B. LEIGH.