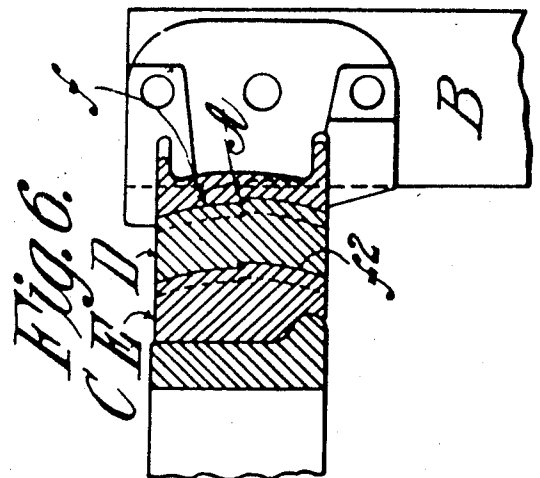
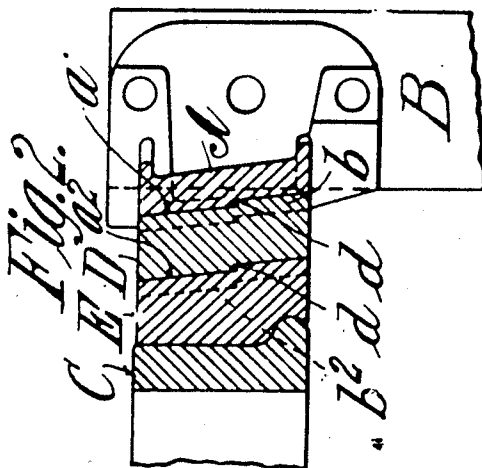
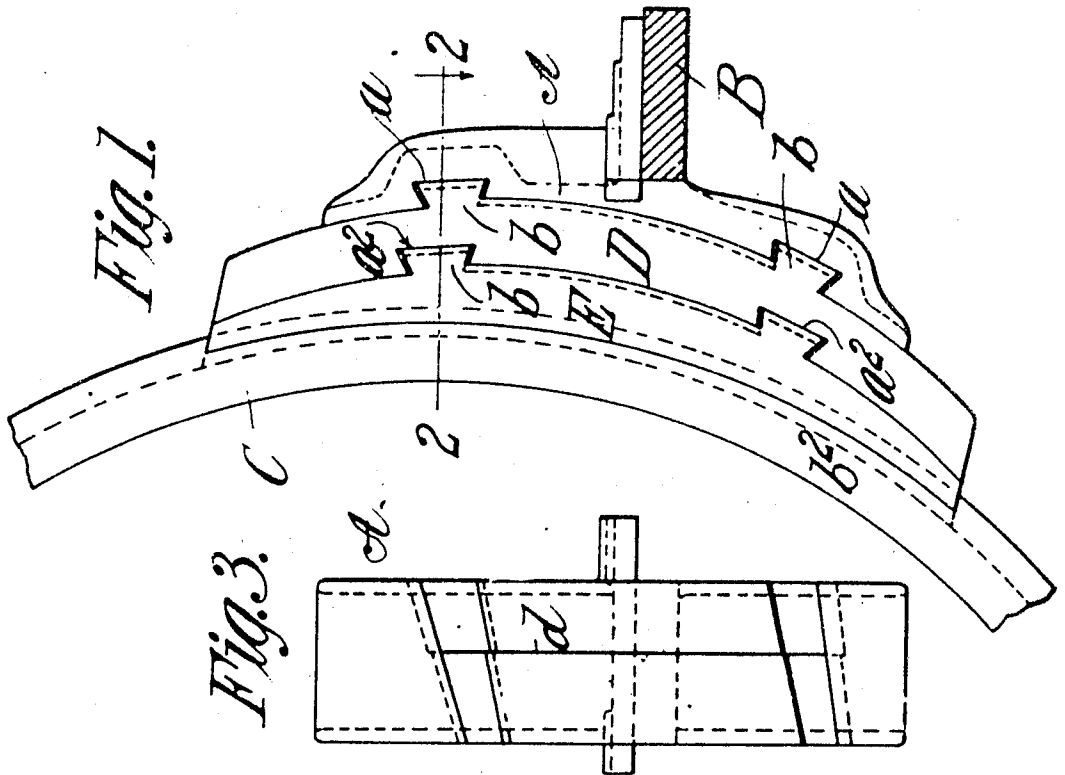


G. M. HOADLEY.
RAILWAY CAR BRAKE.
APPLICATION FILED MAY 17, 1909.

937,069.

Patented Oct. 19, 1909.

2 SHEETS—SHEET 1.



WITNESSES:

H. L. Sprague
R. M. Mowry

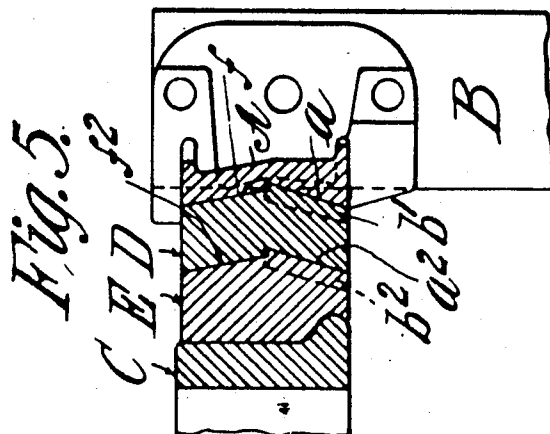
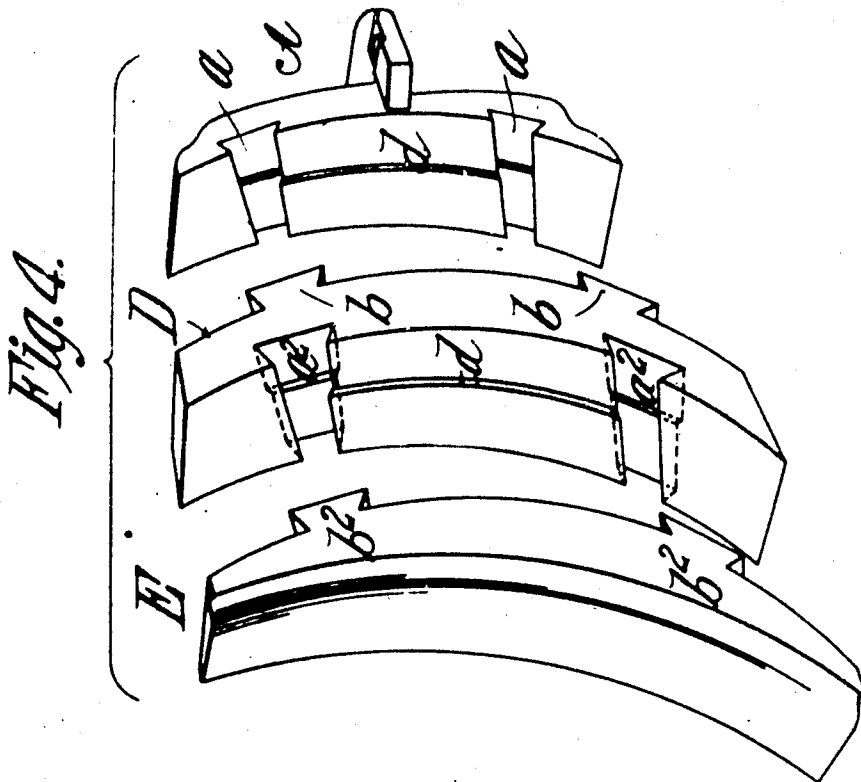
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2 SHEETS—SHEET 2.



WITNESSES:

H. L. Sprague
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INVENTOR,
George M. Hoadley,
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UNITED STATES PATENT OFFICE.

GEORGE M. HOADLEY, OF SPRINGFIELD, MASSACHUSETTS. ASSIGNOR, BY MESNE ASSIGNMENTS, TO HOADLEY BRAKE SHOE COMPANY, OF SPRINGFIELD, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

RAILWAY-CAR BRAKE.

937,069.

Specification of Letters Patent.

Patented Oct. 19, 1909.

Application filed May 17, 1909. Serial No. 496,411.

To all whom it may concern:

Be it known that I, GEORGE M. HOADLEY, a citizen of the United States of America, and resident of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Railway-Car Brakes, of which the following is a full, clear, and exact description.

This invention relates to improvements in a construction of railway car brake shoes and brake-shoe supporting-back or carrying head therefor; and one of the objects is to provide an improved construction of brake-shoe-back and complemental brake-shoes which are susceptible after use of being interchanged so that the one which was initially a rear-brake-shoe may, after a front-brake-shoe has been worn away and the rear brake-shoe more or less worn, be for the moment removed from the brake-shoe-back while the fresh rear brake-shoe is being mounted on the back, and then such partially worn shoe (formerly a rear shoe) interlocked on and carried by the newly provided rear shoe,—to the end that practically, if not absolutely all of, every shoe is subjected to wear in its utilization for braking purposes; no portions or remnants being necessarily thrown away as scrap iron.

Another object of the invention is to provide formations to the brake-shoe-back and to the brake-shoe which is to be carried thereby whereby the parts may have interlocked engagements which are reliable and suitable for the retention of the shoe on the back, with no liability of displacement and without requirement of keys or other fastening devices which are made separate from, or additional to, the brake-shoe and the brake-shoe back.

Another object of the invention is to provide similar means for the interlocking engagements of the complemental shoes one with the other.

Other objects of the invention are to generally improve and simplify the constructions of the several members of the brake device all as will hereinafter appear.

The invention consists in the combination and arrangement of peculiarly constructed brake-shoe members and the brake-shoe-back or carrying head all substantially as hereinafter fully described in conjunction with the

accompanying drawings and as set forth in the claims.

In the drawings:—Figure 1 is a side elevation of a brake-shoe-back and front and rear shoes with, furthermore, an edgewise portion of a car wheel; Fig. 2 is a cross section on line 2—2, Fig. 1; Fig. 3 is a face view of the brake-shoe back and Fig. 4 is a perspective view of the brake-shoe back and the rear and front shoes in separated relations. Figs. 5 and 6 are cross sectional views similar to Fig. 2, but showing modified cross sectional forms of the members of the brake device.

In the drawings A represents a carrying head or brake-shoe-back having appropriate provision for attachment to a brake beam B as usual, and made with its front face curved from end to end on an arc of a circle of a shorter radius than that of the periphery of the car wheel C with which the brake device is to coast.

D and E represent what in their relations shown constitute the rear and front shoes respectively.

As concerns the brake-shoe-back and the brake-shoe directly carried thereby, the one has a dove-tail groove opening at its edge and extending obliquely crosswise and opening to the face of the member, while the other has a dove-tail rib projecting outwardly from, and extending correspondingly obliquely crosswise of, its face for a gravitative interlocking engagement in such groove, and similar means of engagement is provided for removable interlocking engagements between the rear portion of the front shoe and the front portion of the rear shoe. And as specifically shown and as preferably provided, the brake-shoe-back has two of the edgewise opening crosswise and obliquely extending grooves *a a* which are of dove-tail shape and tapered in their lengths, while the rear brake-shoe D has at its back two dove-tail shaped ribs *b b* extending crosswise but more or less oblique corresponding to the inclinations of the grooves *a a* for the interlocking engagements therein; and by reason of the fact that the grooves and ribs have their slants from their edge portions more or less downwardly relatively to the curved lengths of the brake-shoe-back and shoe, a gravitative tendency is induced for causing the shoe to have its ribs settled well into the

grooves therefor and thus, without the necessity of independent or separately provided fastening devices, the brake-shoes will be reliably maintained in its place on the back.

Each shoe D has in its front face crosswise and more or less obliquely extending dove-tail shaped tapered grooves a^1 , a^2 , directly opposite the dove-tail ribs b b^1 which are at the back of the shoe, the same being as to relation, form and dimension, the exact counterparts of those in the brake-shoe-back; and the front brake-shoe E has at its rear face crosswise extending and oblique dove-tail shaped ribs b^2 which are the counterparts of those b for the rear-brake-shoe D.

The brake-shoe-back, the rear and front faces of the rear shoe, and the rear face of the front shoe are formed of step shape as indicated at d d in Figs. 2, 3 and 4, so that there will be limitations of the sliding movements of each part relatively to the next when brought to their dove-tail rib and groove interlocking engagements; and the back faces of the dove-tail ribs and the bases of the dove-tail grooves may be of similar step shape, although in practice the step-like formation may be carried out only on the faces of the complementary parts or at their interlocking rib and groove portions.

As indicated in Figs. 5 and 6, the brake-shoe-back having the front face of arc shape, as to its length, is formed with a shallow channel f between its lateral edges, the same being understood as extending from end to end of the member; the rear brake-shoe has its rear face made expanded from its lateral edges to its longitudinal central line to fit the channel of the shoe, and its front face has a channel f^1 between its lateral edges corresponding to that in the brake-shoe-back, while the front brake-shoe has its rear face made of a form the same as the back face of the rear shoe to fit in the front channel of the rear shoe.

After the front shoe has been worn away for a considerable portion of its thickness by its action on the car wheel, the rear shoe will at its end portions and adjacent its opposite edges become exposed for braking action on the car wheel and to receive the wear therefrom; and, of course, as the result of the brake device is protracted the front shoe will be entirely worn away and the rear shoe considerably worn and very much reduced in its thickness; and before the rear shoe becomes too far gone it will be removed from the brake-shoe back, a fresh rear shoe having a form like that which the already worn rear shoe originally had may be replaced therefor and the much worn member which was formerly employed as the rear shoe will be brought to its interlocking engagement and employed as a front shoe and utilized until it in its turn is entirely worn away.

In Fig. 5 the walls of the channels f and f^1

are formed by surfaces which are convergent relatively to each other at obtuse angles; while in Fig. 6 the walls of the corresponding channels are shown as formed by curved surfaces; and in these forms of the device the pivotal grooves a and a^1 , and the interlocking ribs b and b^1 extend from one edge of the respective parts more or less obliquely not more than half way across the widths thereof.

The brake shoe devices represented in Figs. 1 to 4 inclusive possess in many respects the characteristics of the invention described and claimed in my application for Letters Patent of the United States filed Oct. 22, 1903, No. 459,042, with, however, additional structural features and arrangements which have been hereinabove particularly described and which are covered by some of the appended claims.

It is preferable to employ a plurality of the interlocking ribs and grooves made as features or appurtenances of the brake-shoe-back and the complementary shoes D and E for the reason, especially, that the brake in many cases is so set relatively to the wheel and is so applied for its braking action on the wheel that the one end portion of the brake-shoe is in action and receives wear for a considerable period before the shoe throughout its entire length becomes conformed to the wheel; and, therefore, even although one end portion of the front brake-shoe may be entirely worn away on a curved line inclining to the general length of such shoe so that the interlocking connection for the shoe at such end portion becomes severed there still remains an efficient holding means for the remainder of the shoe at its other end portion.

I claim:—

1. The combination of a brake-shoe-back or carrying-head, and a brake-shoe, one having a dove-tail groove opening at its one edge, extending obliquely crosswise and opening to the face of the member, while the other has a dove-tail rib projecting outwardly from and extending correspondingly crosswise of its face, for a gravitative interlocking engagement in such groove.

2. The combination of a rear brake-shoe, and a brake-shoe-back on which it is removably supported, of a front-brake shoe, one of said shoes having a dove-tail groove opening at its edge, extending obliquely crosswise and also opening to the face of the shoe, while the other shoe has a dove-tail rib projecting outwardly from and extending correspondingly obliquely crosswise of its face, for a gravitative interlocking engagement in the groove of the coacting shoe.

3. The combination of a brake-shoe-back having a dove-tail groove opening at its edge, extending obliquely crosswise and also opening to the face of the back, while the

shoe has a dove-tail rib projecting rearwardly from and extending correspondingly obliquely crosswise of its rear face, for a gravitative interlocking engagement in such groove.

4. The combination of a brake-shoe-back and a brake-shoe, one having a dovetail groove, tapered in its length, opening at its edge, extending obliquely crosswise and opening to the face of the member, while the other has a longitudinally tapered dove-tail rib projecting outwardly from and extending correspondingly crosswise of its face, and adapted for an interlocking engagement in such groove.

5. The combination of a brake-shoe-supporting member, and a shoe member, the one having a dove-tail groove opening at its edge, extending crosswise and opening to the face of the member, while the other has a dove-tail rib projecting outwardly from and extending correspondingly crosswise of its face, for an interlocking engagement in such groove, and said members having step-like formations in their adjoined faces whereby the transverse movement of the shoe member relatively to the supporting member is limited.

6. The combination of a brake-shoe-back and a brake-shoe, one having a dove-tail groove opening at its one edge, extending obliquely crosswise and opening to the face of the member, while the other has a dove-tail rib projecting outwardly from and extending correspondingly crosswise of its face, for a gravitative interlocking engagement in such groove, and means for limiting the extent of sliding movement which the one member may have in its interlocked relation to the other.

7. The combination of a rear brake shoe, and a brake-shoe-back on which it is removably supported, of a front-brake shoe, one of said shoes having a dove-tail groove opening at its edge, extending obliquely crosswise and also opening to the face of the shoe, while the other shoe has a dove-tail rib projecting outwardly from and extending correspondingly obliquely crosswise of its face, for a gravitative interlocking engagement in the groove of the coacting shoe, the front face of the back, the front and rear faces of the rear shoe, and the rear face of the front shoe having corresponding step shaped formations whereby the transverse movements of each member relatively to the next is limited.

8. The combination of a brake-shoe-back a rear brake-shoe and a front brake-shoe, said members being similarly constructed with edgewise opening obliquely extending interlocking dove-tail ribs and grooves.

9. The combination of a rear brake-shoe and a brake-shoe-back on which it is removably supported, of a front-brake-shoe, one

of said shoes having a plurality of dove-tail grooves opening at its edge, extending obliquely crosswise and also opening to the face of the shoe, while the other shoe has a plurality of dove-tail ribs projecting outwardly from and extending correspondingly obliquely crosswise of its face for gravitative interlocking engagements in the grooves of the coacting shoe.

10. The combination with a brake-shoe-back, curved in its length and formed with a shallow channel between its lateral edges, of a rear brake-shoe having its rear face formed to fit the channel of the shoe and having its front face curved in its length and of channeled form between its lateral edges corresponding to that in the face of the brake-shoe-back, a front brake-shoe, curved in its length and having its rear face of a form to fit the front face channel of the rear shoe, and means respectively for removably connecting the rear shoe to the back and the front shoe to the rear shoe.

11. The combination of a brake-shoe-back, a rear brake-shoe and a front brake-shoe, all having in their lengths a similar curvature on an arc of shorter radius than that of the face of the car wheel with which the brake device is to coact,—the brake-shoe-back and the rear shoe having at their front faces channeled formations between their lateral edges while the front and rear shoes have their back faces of forms corresponding to said channels, and means for detachably connecting the rear shoe to the brake-shoe-back and the front shoe to the rear shoe.

12. The combination of a brake-shoe-back, a rear brake-shoe and a front brake-shoe, all having in their lengths a similar curvature on an arc of shorter radius than that of the face of the car wheel with which the brake device is to coact,—the brake-shoe-back and the rear shoe having at their front faces channeled formations between their lateral edges while the front and rear shoes have their back faces of forms corresponding to said channels, said shoes and back having interlocking dove-tail ribs and grooves which extend obliquely crosswise of the respective members.

13. The combination with a brake-shoe having rear and front shoes all curved as to their length, and having channels in their front faces between their lateral edges, the rear faces of the front and rear shoes having forms to fit in said channels of the adjoining members, and means for detachably connecting the front to the rear shoe and the rear shoe to the back.

Signed by me at Springfield, Mass., in presence of two subscribing witnesses.

GEORGE M. HOADLEY.

Witnesses:

WM. S. BELLOWE.

G. R. DRISCOLL.