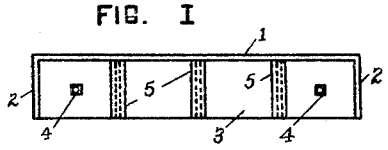
Sept. 4, 1928. 1,682,746

J. E. FINNESSY

TRAIN RETARDER

Filed Jan. 28, 1928

FIG. I



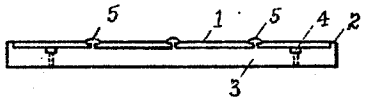
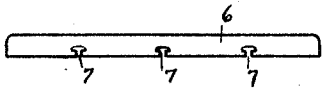


FIG. II

FIG. III



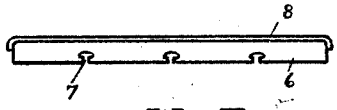
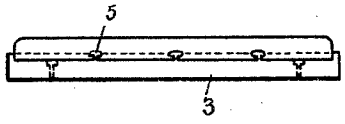


FIG. IV

FIG. V



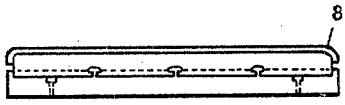
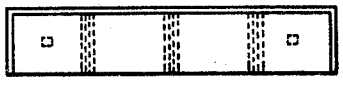


FIG. VII

FIG. VI



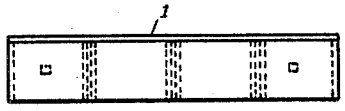


FIG. VIII

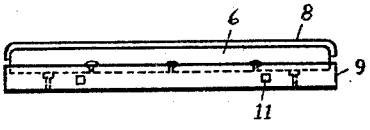


FIG. IX

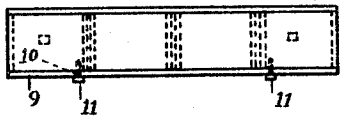


FIG. X

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UNITED STATES PATENT OFFICE.

JAMES E. FINNESSY, OF PITTSBURGH, PENNSYLVANIA.

TRAIN RETARDER.

Application filed January 28, 1928. Serial No. 250,154.

This invention relates to a shoe for use in train retarders.

Train retarders comprise a series of brakes mounted adjacent railway tracks in railway yards. Such retarders are particularly advantageous in yards, as they obviate the necessity of coupling air lines or utilizing hand brakes while shifting cars.

A great problem in the use of train retarders has been the difficulty of providing a satisfactory brake shoe. Cast iron shoes crack and break under the conditions of their use, requiring frequent replacement. Even when rolled steel shoes are employed at the risk of cutting the wheels, they also frequently break in use.

The object of the invention is, therefore, to provide a brake shoe having a facing of resilient material arranged to protect the metal backing member from direct contact with the car wheels, when the shoes of the train retarder are forced against the wheels of the car to check its movement.

A further object of the invention is to provide a resilient facing which is relatively wear resisting, and which has an operating face capable of creating a requisite degree of friction when brought into contact with the wheels of a car.

In the accompanying drawings Figure I is a plan view of the backing member or holder of the train retarder shoe constituting the subject matter of the present invention; Figure II is a side elevation of the same; Figure III is a side elevation of one form of facing member; Figure IV is a side elevation of a facing member of modified structure; Figure V is a side elevation, showing the facing member of Figure III in position on a backing member; Figure VI is a plan view of such complete retarder shoe; Figure VII is a side elevation, showing the facing member of Figure IV in position on a backing member; Figure VIII is a plan view of such complete retarder shoe; Figure IX is a side elevation showing the facing member of Figure IV in position on a backing member of modified form; and Figure X is a plan view of such complete brake shoe.

In the drawings the reference numeral 1 designates the longer side flange of the backing member of the train retarder shoe, and reference numeral 2 the end flanges thereof. The side and end flanges are integral with a body member 3, which provides a seat for the resilient, wheel contacting member, of the shoe. This body 3 contains countersunk bolt holes 4 for attachment of the backing member as a whole to the frame members of the train retarder; and comprises transversely extending lugs or ribs 5 for the attachment of the facing member of the shoe to the backing member. These ribs or lugs 5 are T-shaped, as shown, in order that they may adequately engage the facing member of the shoe, in the manner to be hereinafter described.

As shown, the body 3 is made integral with the side flange 1 and end flanges 2 of the backing member. The backing member may, from the viewpoint of economy, be preferably made as an integral steel or iron casting. With the assembled shoe of the present invention it is not disadvantageous to cast the backing member, because it is fully protected from breakage by the facing member of the shoe.

The facing member 6 of the train retarder shoe is desirably of a resilient composition, and is supported by the body, or seat member, 3.

This facing member 6 may be made of rubber, with suitable friction creating material incorporated therein during vulcanization. For the purpose of creating the desired friction, frictional carbonaceous material, or sand in relatively large quantities may desirably be incorporated in the rubber, while steel filings or grindings may also be incorporated to further increase the wear resisting and friction producing properties of the composition. If desired, asbestos sand, or granular asbestos may be used. This substance, in itself, serves to prevent burning out of the rubber facing, and also serves to increase the friction producing qualities of the facing. It should be understood that the rubber itself used in the facing is desirably a commercial tire rubber, which contains carbon black, and usually some small quantity of zinc oxide.

The composition facing member 6 is provided on its under face with suitable indentations for engaging with the lugs, or ribs, 5 on the body or seat member 3 of the backing member. These indentations are shown as

transversely extending T-shaped slots 7 to match the ribs 5 of the backing member. When the facing member is brought into position on the body 3 and in contact with the flanges 1 and 2, the slots 7 are caused to engage the ribs 5 to hold the facing member in position.

In the form of train retarder shoe shown in Figures IV, VII and VIII of the drawings, the structure is identical with that shown in Figures I, II, III, and V of the drawings, with the exception of an addition to the general assembly of the retarder shoe. This addition comprises a plate 8 of mild steel, or other metal softer than the metal of which car wheels are commonly made. This member 8 engages the outer face of the facing member, and is desirably vulcanized thereto. While no particular attaching means are shown for mutually attaching the plate 8 and facing member 6, the inner surface of the plate 8 may obviously be roughened to assist in the mutual engagement of the plate and facing member during vulcanization of the latter.

With this modified construction the plate 8 provides the face which comes into actual contact with the car wheel. As it is of a metal softer than the metal of the wheel, there is no danger of scoring the latter. As it is of relatively slight thickness, in itself, it possesses an appreciable resiliency; and as it is backed by the resilient member 6, there is slight likelihood of its breakage in use.

The further modification shown in Figures IX and X of the drawings, is identical with the structure shown in Figures IV, VII and VIII, with the exception that an additional member is added to the assembly. This member comprises a detachable side plate 9 having therein bolt holes 10 for the reception of bolts 11 which serve to attach it to the body 3 of the backing member. This side plate 9 positively prevents shifting or dislodgement of the facing member 6. While this modification is shown as applied to the structure of Figures IV, VII and VIII, it should be understood that it is equally applicable to the structures shown in Figures I, II, III, V, and VI of the drawings.

The train retarder shoe of the present invention, presents an economy in continued use, because the members thereof which come into contact with a car wheel are durable, and therefore require infrequent replacement. The backing member, since it is not subjected to blows caused by direct contact with car wheels may be economically manufactured by casting a relatively inexpensive metal. As previously stated, the retarder shoe also obviates any possibility of scoring car wheels upon which it acts.

What I claim is:

1. In a train retarder shoe a metallic backing member comprising a body having a seating face and side and end flanges, lugs on said seating face and a facing of a rubberoid material having in the under region thereof indentations arranged to engage the lugs on the seating face of the body.

2. A train retarder shoe comprising an integral metallic backing member having a seating face and cooperating flanges, headed ribs extending transversely of the seat, and a facing of a rubberoid material having in the under region thereof grooves formed and arranged to engage the ribs on the frame member.

3. A train retarder shoe comprising a metallic backing member having a seating face, lugs on said seating face, a facing of rubberoid material having in the under region thereof indentations arranged to engage the lugs on the upper plate of the frame, and a covering member of a metal softer than chilled steel attached to said rubber facing.

4. A train retarder shoe comprising an integral metallic backing member having a seating face and associated flanges, headed ribs extending transversely of the seat, a facing of rubberoid material having in the under region thereof grooves formed and arranged to engage the ribs on the frame member, and a covering member of a metal softer than chilled steel atttached to said rubber facing.

5. A train retarder shoe comprising a metallic backing member having a seating face and associated flanges, lugs on said seating face, a facing of rubberoid material having in the under region thereof indentations arranged to engage the lugs on the seating face, and a detachable side member arranged to be attached to the remainder of the backing member after attachment of the rubberoid facing.

6. A train retarder shoe comprising an integral metallic frame member having a seating face and flanges associated therewith, ribs extending transversely of the seat, a facing of rubberoid material having in the under region thereof grooves formed and arranged to engage the ribs on the frame member, and a detachable side member arranged to be attached to the remainder of the body member after attachment of the rubberoid facing.

7. A train retarder shoe comprising a metallic body member having a seating face and associated flanges, lugs on the seating face, a facing of rubberoid material having in the under region thereof indentations arranged to engage the lugs on the upper plate of the frame, a covering member of a metal softer than chilled steel attached to said rubber facing, and a detachable side member.

8. A train retarder shoe comprising a metallic body member having a seating face, a facing of rubberoid material, and means for attaching said rubberoid facing to the seat of the metallic body member.

9. A train retarder shoe comprising a

metallic body member having a seating face, a facing of rubberoid material, means for attaching said rubberoid facing to the seat of the metallic body member, and a covering member of a metal softer than chilled steel attached to said rubberoid facing.

10. A train retarder shoe comprising a metallic body member having a seating face, yielding means attached to said face, and a covering member of a metal softer than chilled steel attached to said yielding means.

In witness whereof I hereunto set my hand.

JAMES E. FINNESSY.