H. JONES.

INTERLOCKING BRAKE SHOE.

APPLICATION FILED FEB. 12, 1910.

963,772. Patented July 12, 1910.

Fig. 1.

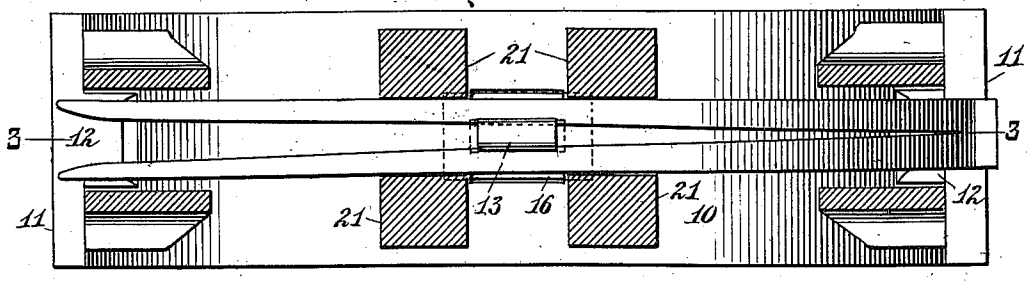


Fig. 2.

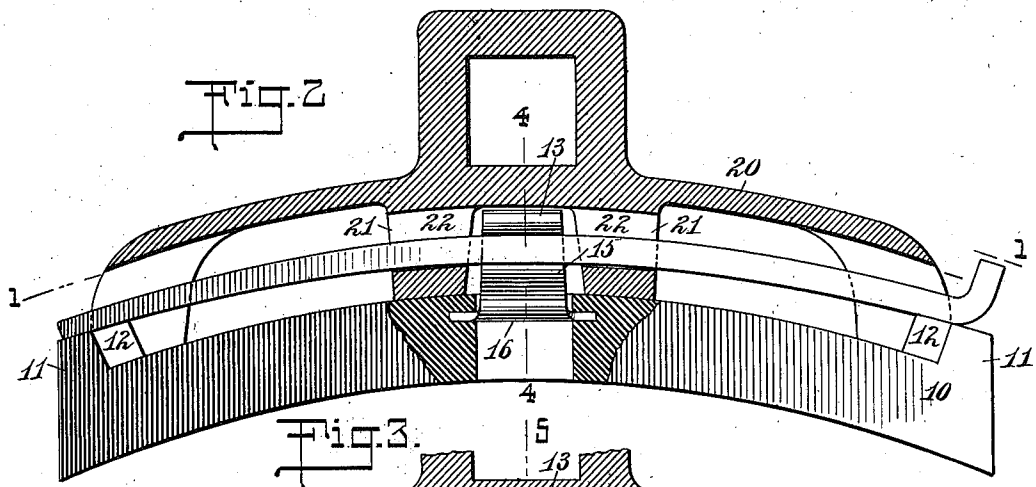


Fig. 3.

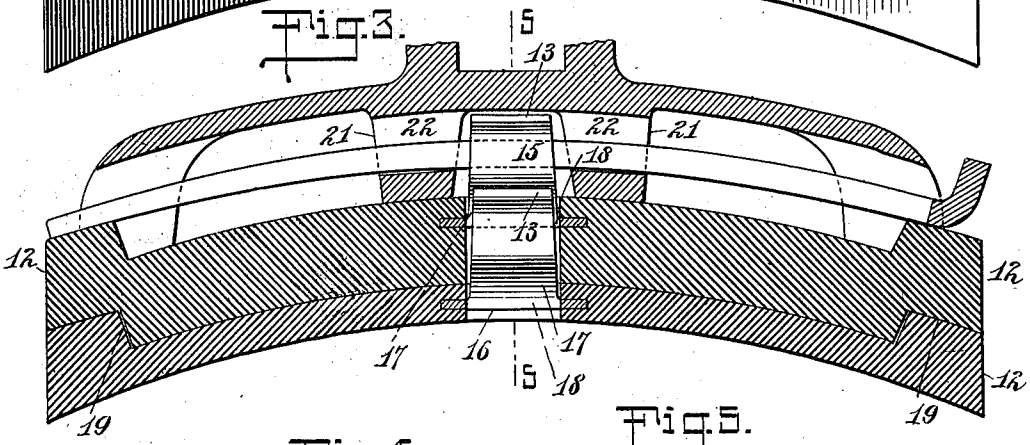


Fig. 4.

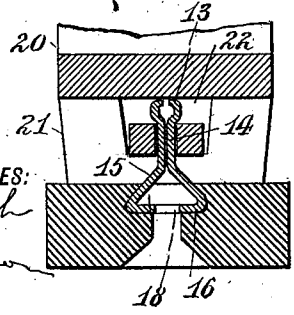
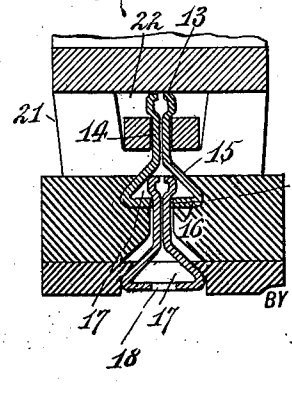


Fig. 5.



WITNESSES:

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INTERLOCKING BRAKE-SHOE.

963,772. Specification of Letters Patent. Patented July 12, 1910.

Application filed February 12, 1910. Serial No. 543,449.

To all whom it may concern:

Be it known that I, HARRY JONES, a citizen of the United States, and a resident of Suffern, in the county of Rockland and State of New York, have made and invented certain new and useful Improvements in Interlocking Brake-Shoes, of which the following is a specification.

My invention relates to an improvement in brake shoes, such, for instance, as are used on the driving wheels of locomotives, or on the wheels of freight or passenger railroad or railway cars, and more particularly to that type or style of shoe generally known and referred to as an interlocking shoe whereby is meant such a shoe as may be attached or secured, when partly worn in service, to the wearing face of a new shoe, in order that the partially worn shoe may be entirely worn away in service and no scrap remain.

The object of the invention is to provide an interlocking shoe so constructed that the partially worn shoe and the new shoe may be easily and readily assembled, and when assembled be so securely locked together as to avoid any danger of their becoming accidentally disengaged.

A further object of the invention is to so construct and assemble the fastening means that the shoe will not be materially weakened across the center, and with these and other ends in view, the invention consists in certain novel features of construction and combinations of parts as will be hereinafter fully described and pointed out in the claims.

In the accompanying drawings Figure 1 is a sectional view taken on the line 1—1 of Fig. 2. Fig. 2 is a longitudinal sectional view of a new shoe attached to the brake head. Fig. 3 is a similar view with a portion of the brake head broken away and showing a partially worn shoe attached to the wearing face of a new shoe taken on the line 3—3 of Fig. 1. Fig. 4 is a sectional view taken on the line 4—4 of Fig. 2. Fig. 5 is a sectional view taken on the line 5—5 of Fig. 3.

In these drawings it will be noticed that I have illustrated a plain cast iron shoe, with an ordinary M. C. B. standard type of brake head attached thereto, the shoe being an unflanged one, and such as is ordinarily used on the wheels of passenger and freight cars. It should be stated, however, that the invention is equally well adapted for use in connection with flanged shoes, and also to composite shoes such for instance as contain inserts, either in the form of slugs of comparatively hard or soft metal, or in the shape of expanded metal or wire mesh, and usually referred to as "Diamond-S" shoes, this wire mesh or expanded metal usually extending from the wearing face of the shoe to or within a short distance of the back thereof. I have also constructed shoes employing this invention, which have been formed with a reinforced back of such expanded metal or wire mesh. As, however, such features do not constitute a part of the present invention the several forms of inserts or reinforcing backs have been purposely omitted from the drawings.

Referring to the drawings, 10 represents the body of a brake shoe made or formed of any desirable metal, preferably cast iron, which, as before stated, may be provided with any of the well known forms of inserts or reinforcements. This shoe, as is ordinarily the case, is provided with end stops 11 and guide lugs 12. In the metal of which the body 10 is formed, is partially embedded a fastening or key lug constructed preferably of a single piece of wrought or malleable metal, or mild steel, although it will of course be understood without further illustration, that this lug may be made of two or more sections. In the preferred form illustrated however, it is made of a single piece of metal, the upper free shouldered ends 13 being slightly spaced apart in order to impart thereto a certain amount of spring or resiliency. The metal is then bent downwardly to form a web or wall 14 of double the thickness of the plate of which the lug is formed, these plates then diverging as illustrated at 15, and integrally connected to the horizontal base plate 16, this plate being provided with the central opening 17 of such size or dimensions as will receive the upper free shouldered ends of a corresponding lug when compressed or closed together. This bottom plate 16 is extended at its ends in order to provide an anchorage for the same in the cast metal of the body of the shoe as clearly illustrated in Figs. 2 and 3 of the drawings. Below this lug the body of the shoe is formed with a hole or opening 18 for the purpose hereinafter mentioned. In assembling this lug with the body of the shoe

it is placed in a mold and the body metal poured around it in a way similar to the methods now in general use for securing the ordinary form of strap lug or loop to the body of the shoe. In this instance, however, care will be taken to form the opening 18 in the body of the shoe below the lug and also to prevent the cast metal flowing into and filling up the opening 17 in the lug itself. In the wearing face of the shoe are provided recesses or depressions 19 of such size and contour as to nicely receive and contain the end stops 11 and guide lugs 12 on the rear face or side of a similarly made shoe.

With this shoe is used any desired form of head 20, that illustrated in the drawing being of the ordinary type and ordinary M. C. B. standard and comprising in part the lugs 21 which when the head and shoe are assembled bear or rest upon the rear side or face of the body of the shoe, these lugs being provided with the openings 22 to permit of the passage of the fastening key 23 through the same, whereby to lock the head and shoe together.

In the ordinary type of shoe lug, as is well known, the fastening key passes through the lugs on the brake head and through the lug formed on or secured to the body of the shoe, but by reference to the several figures of the drawings it will be seen that in my improved construction of shoe I employ a split key, which instead of passing through the shoe lug receives the same between the two sections or members thereof, this split key straddling the vertical wall or web of the lug and impinging or bearing against the upper free shouldered ends 13 thereof. The key passes through the opening 22 of the brake head lugs 21, and serves to draw the head and shoe tightly together and prevent any shaking or rattling thereof as clearly illustrated in Figs. 4 and 5 of the drawings.

After a shoe has been partly worn in service, it is attached to the wearing face of a new shoe as illustrated in Fig. 3 of the drawings, the key lug of the worn shoe passing up through the opening 18 of the new shoe and the shouldered ends of said lug passing into and through the opening 17 formed in the lug attached to the new shoe. After these free ends of the lug have passed into and through the opening 17, they will slightly spring apart, causing the shoulders thereon to bear on the bottom plate 16 of the lug of the new shoe as clearly illustrated in Fig. 5 thereby securely locking the patrially worn shoe and the new shoe together, the end stops and guide lugs of the partially worn shoe fitting into the recesses or depressions 19 formed in the wearing face of the new shoe.

By constructing the lug as above described, it will be seen that but a small opening 18 is formed in the body of the shoe thereby preserving the strength of the latter to a much greater extent than has heretofore been the case where such opening was made of a sufficient size to receive the ordinary strap or loop lug.

I am aware that it is not new to form an interlocking shoe with a shouldered lug adapted to fit into an opening formed in the body of a corresponding shoe and interlocking therewith, but I am not aware that an interlocking shoe has ever been constructed wherein the lug of the worn shoe was adapted to interlock with the lug of the new shoe, and hence:—

What I claim is.

1. An interlocking brake shoe provided with a lug adapted to interlock with the lug of the worn shoe, substantially as described.

2. An interlocking brake shoe provided with a lug adapted to receive and interlock with the lug on the worn shoe.

3. An interlocking brake shoe provided with a resilient lug adapted to receive and interlock with a similar lug on the worn shoe.

4. An interlocking brake shoe comprising a body and a lug, said body and lug being formed with registering openings whereby said lug may receive and interlock with the lug on the worn shoe.

5. An interlocking brake shoe provided with a key lug adapted to interlock with the lug of a worn brake shoe, in combination with a key adapted to straddle said lug, substantially as described.

6. In an interlocking brake shoe the combination with an unworn shoe provided with a lug formed with a vertical wall, of an attaching key adapted to straddle the wall of said lug, and a worn shoe provided with a lug adapted to interlock with the lug on the unworn shoe.

7. In an interlocking brake shoe the combination with an unworn shoe provided with a resilient lug, formed with a vertical wall, of a worn shoe provided with a similar lug adapted to pass through the body of the unworn shoe and engage and interlock with the lug on the unworn shoe, a brake head and a split key adapted to engage said brake head and straddle the wall of the lug on the unworn shoe, substantially as described.

8. In an interlocking brake shoe the combination with an unworn shoe provided with a resilient lug, of a worn brake shoe fitting on the wearing face thereof and provided with a lug adapted to pass through the body of said unworn shoe and engage and interlock with the lug on said unworn shoe, and a split key adapted to straddle the lug on said unworn shoe, substantially as described.

9. In an interlocking brake shoe the com-

bination with an unworn shoe, of a worn shoe fitting on the wearing face of the former, each of said shoes being provided with a key lug formed with an opening in the base thereof, a vertical wall and a shouldered upper resilient portion, whereby the lock on the worn shoe is adapted to enter and interlock with the lug on the unworn shoe.

10. In an interlocking brake shoe the combination with an unworn shoe provided with an opening in the body thereof, of a key lug partially embedded in the body of said shoe and over said opening, a worn shoe fitting on the face of said unworn shoe and provided with a lug similar to that on the unworn shoe, and formed with a base adapted to receive and interlock with a similar lug, said lug being also formed with a vertical wall and an upper resilient shouldered portion, and a split key adapted to straddle the vertical wall of the lug and fit against the shouldered portion thereof.

11. In an interlocking brake shoe the combination with an unworn shoe, of a worn shoe fitting on the face thereof, each of said shoes being provided with a lug comprising a base plate having an opening therein to receive and interlock with a similar lug, said base plate being extended at the ends thereof, and from which base plate extend integrally the sides of said lug to form a vertical wall, the two plates constituting said wall being shouldered and slightly separated at their upper ends, substantially as described.

12. In an interlocking brake shoe the combination with a body, of a resilient lug partially embedded therein and formed with a vertical wall, of a split key adapted to straddle said wall.

Signed at New York borough of Manhattan in the county of New York and State of New York this 10th day of February A. D. 1910.

HARRY JONES.

Witnesses:
W. P. EDSON,
A. V. WALSH.