

J. J. KINZER.
BRAKE SHOE.
APPLICATION FILED APR. 20, 1912.

1,045,564.

Patented Nov. 26, 1912.

FIG. 3.

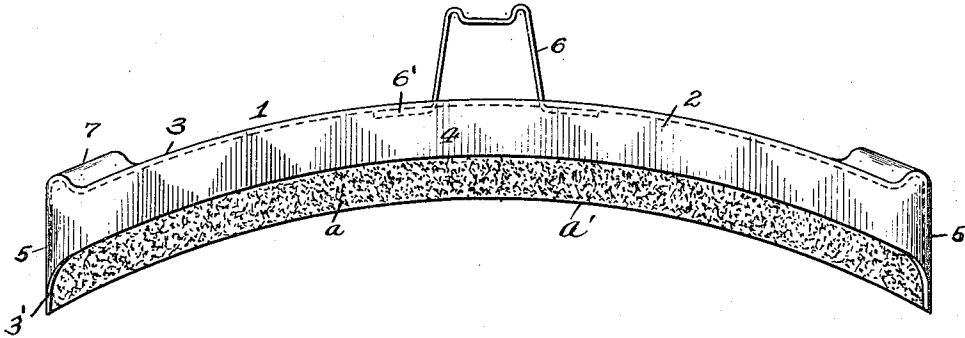


FIG. 1.

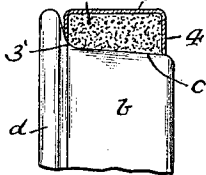


FIG. 5.

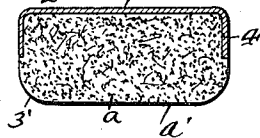


FIG. 2.

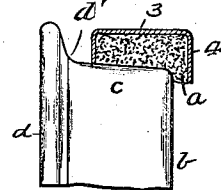


FIG. 4.

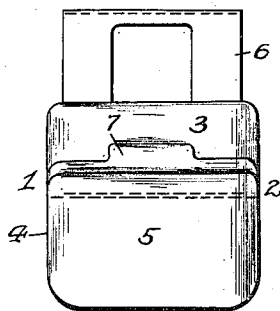
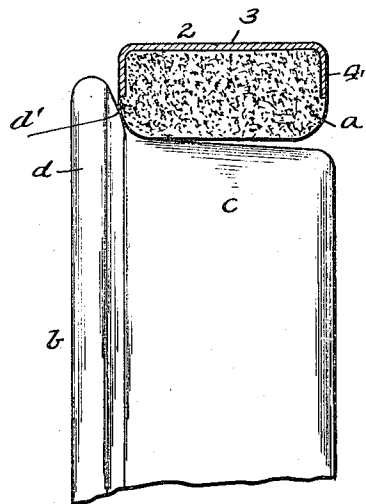


FIG. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

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BRAKE-SHOE.

1,045,564.

Specification of Letters Patent.

Patented Nov. 26, 1912.

Application filed April 20, 1912. Serial No. 692,059.

To all whom it may concern:

Be it known that I, JOHN JACOB KINZER, a resident of Wildwood, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Brake-Shoes; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to brake shoes and has special relation to the class of such shoes which are provided with an inclosed metallic casing around a filling of frictional material for engagement with a wheel in braking. Heretofore in the use of these brake shoes it has been found that they will wear down only on one side of the same in their braking on a car or other like wheel, which in some cases is caused by the hanger and brake beam on the car carrying the shoe being worn or out of place, so that the shoe is pressed more closely on the flange of the wheel on one side, while in other cases the shoe may extend out beyond the outer edge of the face of the wheel, and thus wear down only that part of the shoe bearing on the wheel and which in many cases the wear is only on one half of the shoe, thereby causing a great loss in the value of the shoe.

The object of my invention is to overcome these difficulties and to provide a cheap, simple and efficient form of a brake shoe or casing which will enable the shoe to be reversed when worn down on one side, so that the other side can be placed in engagement with the wheel and thus allow the whole face of the filling material to be worn down uniformly, while at the same time when the shoe is reversed it will avoid the metal of the casing, coming in contact with the wheel.

To these ends my invention consists, generally stated, in the novel arrangement, construction and combination of parts, as hereinafter more specifically set forth and described and particularly pointed out in the claims.

To enable others skilled in the art to which my invention appertains to construct and use my improved brake shoe, I will describe the same more fully, referring to the accompanying drawing, in which—

Figure 1 shows an end view of an ordinary approved form of a brake shoe show-

ing it in engagement with the flange of a car wheel and with one side of the same worn down thereby. Fig. 2 is a like view of a similar shoe in engagement with a car wheel and with one side worn down by the outer edge of such wheel. Fig. 3 is a side elevation of my improved shoe. Fig. 4 is an end view of my improved form of brake shoe. Fig. 5 is a cross section of the shoe. Fig. 6 is a view of my improved shoe in engagement with the car wheel.

Like symbols of reference herein indicate like parts in each of the figures of the drawing.

As illustrated in the drawing 1 represents my improved brake shoe, which comprises an inclosing casing and a filling of frictional material inserted within such casing. The casing 2 is preferably formed from sheet, plate or other metal, having a substantial degree of strength and ductility, such as cast, malleable, wrought or other steel or iron and when formed from sheet or plate metal it is pressed or bent in suitable dies into a structure having an integral back wall 3, side walls 4 and end walls 5, as well as being open at its front for the insertion of the filling material *a* and curved in accordance with the periphery of the car wheel *b*, on which the brake shoe 1 is to be used.

The usual supporting lug 6 is connected or fixed to the back 3 of the casing 2 in any suitable manner for connecting the shoe 1 to the ordinary brake head or hanger (not shown), and is preferably separate therefrom, as shown, by having its inner ends 6' passed through slots in said back and turned against the inner face of the same to connect said lug to said casing. Short bearing surfaces 7, which are adapted to abut against bearings on the ends of the brake-head or hanger are formed on the back wall 3 of the casing 2, adjoining its ends, while central or intermediate bearings on said head or hanger are adapted to abut against said back wall and on each side of the lug 6.

The rubbing or frictional action of the brake shoe upon the wheel *b* is exerted by the frictional member *a* which consists of a filling of any suitable material, such as cast iron or a composition of matter specially prepared for the purpose, and of such character as to exert proper and sufficient fric-

tion upon the periphery *c* of such wheel without the imposition of undue or excessive pressure thereon, and compositions of this character are well known in the art. This filling *a* is either cast into the casing 2 when set in a mold or inserted in such casing under pressure and retained in position, after hardening, by the walls 3, 4 and 5 of said casing, so that when in place in such casing the filling *a* in the ordinary cases will have its wheel bearing surface *a'* substantially flush with or extending slightly beyond the inner edges of said casing walls.

In the former use of the brake shoe 1, as hereinbefore described, where the brake hanger or brake beam was worn or out of place, the inner side 4 of the shoe casing 2 and filling material *a* would wear down by reason of the engagement of such inner side of the shoe 1 with the flange *d* of the wheel *b*, as shown in Fig. 1, and such inner side of the casing and filling material of the shoe will also wear down in like manner from the same cause or defects in the hanger and beam in the engagement of such inner side of the casing with the tread or periphery *c* of the wheel *b* by the outer side of such shoe extending beyond the outer edge or tread of such wheel, as shown in Fig. 2. In the present form of the brake shoe 1 the side walls 4 of the casing 1 are made considerably shorter in height than the bearing face *a'* of the filling material *a* and end walls 3 of the casing, so that when the inner side of the shoe bears against the flange *d* of the wheel *b* and corner connection *d'* between said flange and tread *c* or when the shoe bears against the outer portion of the tread *c* of such wheel and extends beyond such tread and is thus worn down thereby in only a portion or one-half of the shoe, such shoe can then be removed from the brake head or hanger in the ordinary manner and reversed thereon when again placed in position, which will enable the other portion or half not worn down to bear against said wheel flange or outer portion of such wheels tread and be worn down to a generally uniform bearing face on the shoe. The end walls 5 of the shoe 1 can be curved at their corner connections 3' between such walls and the side walls 4 in order to conform to the curved connection *d'* between the wheel flange *d* and the tread *c* on the wheel *b* in order to allow for the wearing down of both sides of the shoe, so that such end walls are thus enabled to be of the full height by extending to the bearing face of the filling material *a* for supporting such filling against frictional strain on the shoe.

It will be evident that, if desired, my improved brake shoe 1 can have its side walls 4 corrugated, instead of flat, while various other modifications and changes in the design and construction of such shoe may be

resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

It will thus be seen that my improved brake shoe will be enabled to be reversed on the hanger so that both sides of the frictional bearing surface on the same can be brought into engagement with the wheel in case of the shoe wearing down only on one side and thus save a great loss in the value of these shoes where they are thrown away after being worn down on one side and the construction of the same will not permit them to be reversed. The shoe will, therefore, be enabled to have its bearing face wear down uniformly and its casing will not interfere with its work in this respect.

What I claim as my invention, and desire to secure by Letters-Patent, is—

1. A brake shoe comprising an inclosing casing and a filling of frictional material, said casing being provided with ends and sides around said material and having its sides shorter than said ends and terminating short of the bearing face of said material.

2. A brake shoe comprising an inclosing casing and a filling of frictional material, said casing being provided with ends and sides around said material and having its sides shorter than said ends and terminating short of the bearing face of said material, and said ends being curved at their connection with said sides to conform to the shape of the wheel between its flange and tread.

3. A brake shoe comprising an inclosing casing and a filling of frictional material, said casing being provided with ends and sides around said material and having its sides shorter than said ends and terminating short of the bearing face of said material, said sides being corrugated.

4. A brake shoe comprising an inclosing casing and a filling of frictional material, said casing being provided with ends and sides around said material and having its sides shorter than said ends and terminating short of the bearing face of said material, and said ends being curved at their connection with said sides to conform to the shape of the wheel between its flange and tread, said sides being corrugated.

5. As a new article of manufacture a brake shoe casing having both of its sides shorter in height than the ends of the shoe.

6. As a new article of manufacture a brake shoe casing having both of its sides shorter in height than the ends of the shoe and corrugated.

7. As a new article of manufacture a brake shoe casing having both of its sides shorter in height than the ends of the shoe, said ends connecting said sides by curved portions.

8. As a new article of manufacture a

brake shoe casing having both of its sides shorter in height than the ends of the shoe and corrugated, said ends connecting said sides by curved portions.

5 9. A brake shoe comprising a metallic casing and a filling of frictional material, said casing being provided with ends and
10 sides around said material and having its sides shorter than said ends and terminating short of the bearing face of said material.

10. A brake shoe comprising a metallic casing and a filling of frictional material, said casing being provided with ends and
15 sides around said material and having its sides shorter than said ends and terminating short of the bearing face of said material, and said ends being curved at their connection with said sides to conform to the
20 shape of the wheel between its flange and tread.

11. A brake shoe comprising a metallic casing and a filling of frictional material, said casing being provided with ends and
25 sides around said material and having its sides shorter than said ends and terminating short of the bearing face of said material, said sides being corrugated.

12. A brake shoe comprising a metallic
30 casing and a filling of frictional material, said casing being provided with ends and

sides around said material and having its sides shorter than said ends and terminating short of the bearing face of said material, and said ends being curved at their connection with said sides to conform to the shape of the wheel between its flange and tread, said sides being corrugated.

13. As a new article of manufacture a metallic brake shoe casing having both of its
40 sides shorter in height than the ends of the shoe.

14. As a new article of manufacture a metallic brake shoe casing having both of its
45 sides shorter in height than the ends of the shoe and corrugated.

15. As a new article of manufacture a metallic brake shoe casing having both of its sides shorter in height than the ends of the shoe, said ends connecting said sides by
50 curved portions.

16. As a new article of manufacture a metallic brake shoe casing having both of its sides shorter in height than the ends of the shoe and corrugated, said ends connecting
55 said sides by curved portions.

In testimony whereof, I the said JOHN JACOB KINZER, have hereunto set my hand.
JOHN JACOB KINZER.

Witnesses:

J. N. COOKE,

T. B. HUMPHRIES.