

J. J. KINZER.
BRAKE SHOE.

APPLICATION FILED SEPT. 10, 1912.

1,058,002.

Patented Apr. 1, 1913.

Fig. 1.

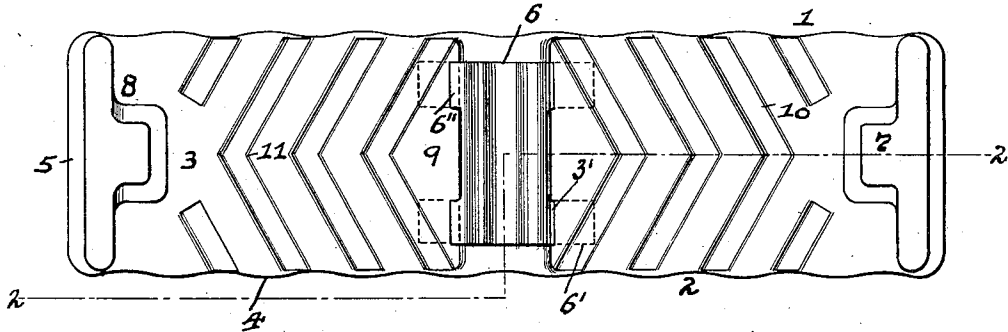


Fig. 2.

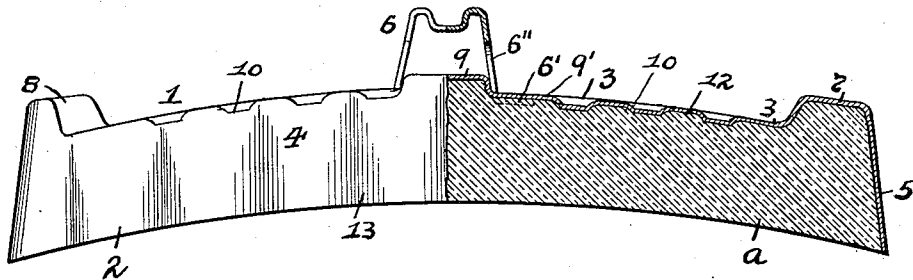
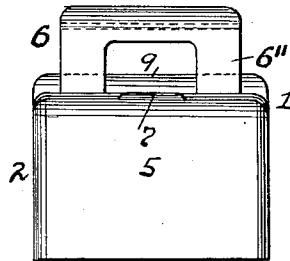


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

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BRAKE-SHOE.

1,058,002.

Specification of Letters Patent.

Patented Apr. 1, 1913.

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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
5 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
10 has special reference to the class of brake-shoes having an inclosing casing provided with a filling of frictional material therein. Heretofore, in this class of brake-shoes the inclosing casing surrounding the filling
15 of frictional material therein when subjected to the great strains and hard uses in their employment would be liable to have the backs of the casings and filling material of the same curve or bulge outward centrally
20 of the shoe or the ends of such casings and material curve or turn outward which, in either case would allow only the remaining portion of the filling material to bear against the wheel on which it is used, and thus give
25 only a partial braking power and an imperfect shoe by thus being distorted, injured or pressed out of its original curved shape which in some cases would loosen the filling material from the casing and cause it to
30 break and fall out of the casing.

The object of my invention is to overcome these objections and to provide such a cheap, simple and efficient form of a shoe in which
35 the back of the shoe will not be subjected to such curving or bulging action, as well as such a form of shoe which will enable both the casing and filling material to retain their shape under all conditions, and thus greatly strengthen the shoe and hold the filling material therein intact.

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
45 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 is a back plan view of my improved brake shoe. Fig. 2 is a combined

side elevation and sectional view of the same on the line 2—2 Fig. 1. Fig. 3 is an end view
55 of the shoe.

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

As illustrated in the drawing 1 represents
60 my improved brake shoe, which comprises an inclosing casing 2 and a filling α of frictional material inserted within said casing. The casing 2 is preferably formed from refractory material, sheet, plate or other metal
65 having a substantial degree of strength and ductility, such as malleable, wrought or other steel or iron, and when formed from refractory material, sheet or plate metal it is pressed or bent in suitable dies into a
70 structure having an integral back wall 3, side walls 4, and end wall 5, as well as being open at its front for the insertion of the filling material α and curved substantially in accordance with the periphery of the car
75 wheel on which the brake shoe 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 approved brake head or
80 hanger (not shown), and is preferably separate therefrom, as shown, by having the inner ends 6' on its legs 6'' passed through slots 3' in said back and turned against the inner face of the back to connect such lug
85 to such casing.

The back 3 of the casing 2 is provided with short bearing surfaces 7, one at each end, which are adapted to abut against bearings on the ends of the brake head or hanger, and
90 such bearing surfaces are preferably formed integral with such back as being struck out of the same, and recessed, as at 8. Central or intermediate bearings on the brake-head or hanger are adapted to abut against the
95 back wall 3 of the casing and on each side of the lug 6 as at 9' and a central bearing surface 9 is preferably formed integral with said back and struck out of the same for fitting within said lug to support and prevent
100 such lug from being sheared off by the thrust of the hanger in the frictional pull of the shoe.

Extending across the back 3 of the casing 2 are a series of corrugations 10 which are
105 preferably formed by the material of the

back being struck out, and such corrugations extend between the bearing surfaces 7 and 9 and preferably in triangular shape as at 11.

The rubbing or frictional action of the 5 brake-shoe 1 upon the tread of the wheel (not shown) 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 10 the purpose, and of such character as to exert proper and sufficient friction upon the periphery of such tread without the imposition of undue or excessive pressure thereon, and compositions of this character are 15 well known in the art. This filling *a* is either cast into the casing 2 or inserted in such casing under pressure and retained in position, after hardening, by the walls 3, 4 and 5 of the casing with portions of such 20 material preferably entering the recesses 12 formed on the inner face of the back wall 3 by the corrugations 10 and bearing surfaces 7 and 9.

It will be evident that my improved 25 brake-shoe can have its side walls 4 corrugated, as at 13, while various other modifications and changes in the design and construction of my improved brake-shoe may be resorted to without departing from the 30 spirit of the invention or sacrificing any of its advantages.

It will thus be seen that when my improved brake shoe is in use the back of the 35 same will be so stiffened and strengthened as to prevent the buckling, turning or curving out of the shoe at any point, which will greatly add to the wear of the shoe, as well as to its life, and will greatly increase its braking power, while at the same time very 40 little, if anything, will be added to its cost of manufacture and the holding power of the casing with the filling material greatly increased. In thus forming the casing back it will be seen that a lighter casing can be 45 used than in ordinary constructions, which

will greatly reduce the weight of the shoe and give better results by taking some of the objectionable dead weight off the brake-hanger and beam.

What I claim as my invention and desire 50 to secure by Letters-Patent, is—

1. A brake-shoe comprising an inclosing casing and a filling of frictional material, said casing having an integral back, sides and ends and said back being corrugated. 55

2. A brake-shoe comprising an inclosing casing and a filling of frictional material, said casing having an integral back, sides and ends and said back having corrugations 60 extending across the same.

3. A brake shoe comprising an inclosing casing and a filling of frictional material, said casing having an integral back, sides and ends and said back having angular 65 shaped corrugations extending across the same.

4. A brake shoe comprising an inclosing casing and a filling of frictional material, said casing having an integral back, sides and ends and said back being corrugated, 70 and corrugations on the sides of said casing.

5. A brake-shoe comprising an inclosing casing and a filling of frictional material, said casing having an integral back, sides and ends and said back having corrugations 75 extending across the same, and corrugations on the sides of said casing.

6. A brake shoe comprising an inclosing casing and a filling of frictional material, said casing having an integral back, sides 80 and ends and said back having angular shaped corrugations extending across the same, and corrugations on the sides of said casing.

In testimony whereof, I the said JOHN 85 JACOB KINZER have hereunto set my hand.

JOHN JACOB KINZER.

Witnesses:

J. N. COOKE,

T. B. HUMPHRIES.