

H. JONES.
FLANGED BRAKE SHOE.
APPLICATION FILED MAR. 25, 1913.

1,066,119.

Patented July 1, 1913.

Fig. 1.

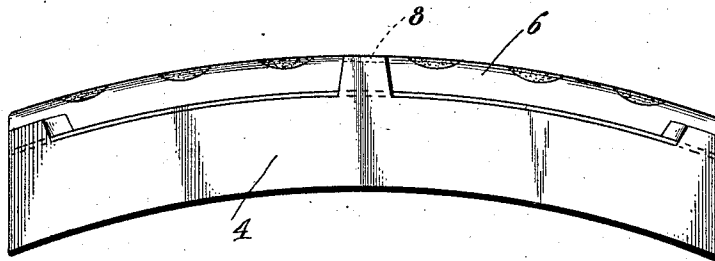


Fig. 2.

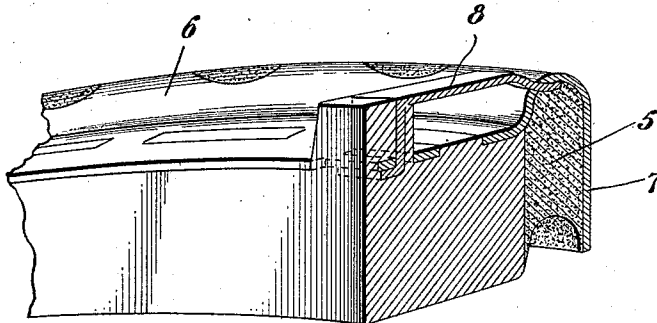
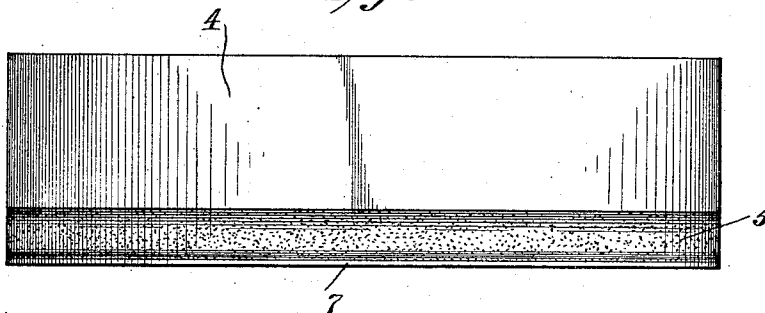


Fig. 3.



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UNITED STATES PATENT OFFICE.

HARRY JONES, OF SUFFERN, NEW YORK, ASSIGNOR TO AMERICAN BRAKE SHOE & FOUNDRY COMPANY, OF MAHWAH, NEW JERSEY, A CORPORATION OF NEW JERSEY.

FLANGED BRAKE-SHOE.

1,066,119.

Specification of Letters Patent.

Patented July 1, 1913.

Application filed March 25, 1913. Serial No. 756,686.

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 Flanged Brake-Shoes, of which the following is a specification:

My invention relates to brake shoes designed for use upon railway and similar vehicles, and more particularly to brake shoes of the type commonly referred to as flanged brake shoes comprising a portion adapted to contact with the tread of a wheel to thereby retard the motion of the vehicle, and the second or flange portion adapted to contact with the flange portion of the wheel, which flange portion, however, acts in the nature of a guide and contributes but little if any to the braking action of the shoe.

The use of flanged brake shoes of the kind above referred to and when made entirely or for the most part of metal as is the usual practice, is accompanied by an excessive amount of noise, particularly of a shrill, squeaking or squealing character which is exceedingly objectionable, especially when the shoes are used upon cars which traverse the streets of a city or town; and extensive experiments performed by me have led me to believe that this noise is due almost entirely to the presence of the flange portion of the shoe which, as will be understood, is commonly of metal and is in contact with the flange portion of the wheel. I have found, moreover, that if the flange portion of a flanged brake shoe is made of a non-metallic substance the noise above referred to is very much reduced and may in fact be practically eliminated, while at the same time the non-metallic or composition flange portion of the shoe forms a sufficient guide for holding the shoe and keeping it in such a position that its tread portion will come into proper contact with the tread of the wheel. An additional advantage is that the flange portion of the car wheel is worn and injured less if the flange portion of the shoe is made of non-metallic substance, than is the case when the flange portion of the shoe is entirely or for the most part of metal.

The object of my invention is therefore to provide a brake shoe having a metallic body portion adapted to contact with the tread of a wheel, and a non-metallic flange portion

adapted to contact with the flange of a wheel, with a view to securing the advantages above pointed out.

A second object of my invention is to provide a particular construction of brake shoe having tread and flange portions made of the materials and arranged with reference to one another as above pointed out.

With the above and other objects of invention in view, my invention consists in the improved flange brake shoe illustrated in the accompanying drawing and herein-after described and claimed, and in such variations and modifications thereof as will be obvious to those skilled in the art to which my invention relates.

In the drawing accompanying and forming a part of this application: Figure 1 is a view showing my improved brake shoe in side elevation; Fig. 2 is a view showing a section upon a transverse plane, with portions of the shoe beyond said plane in perspective; and, Fig. 3 is a view showing the wearing face of my improved shoe.

Referring to the drawing, the reference character 4 designates the metallic body or tread portion of my improved shoe and which body portion is designed to contact with the tread of a car wheel. While I refer to this portion as metallic, I may say that in so doing I mean to convey the idea that the predominating characteristics of this body portion are metallic, and not that it may not, if found desirable be made partly of non-metallic substances, as for example by providing it with blocks of non-metallic material located in recesses formed in its wearing face. The body portion may also, as will be understood, have metallic bodies of various forms embedded in it for the purpose of prolonging the life of the shoe or increasing or modifying its braking action. These particulars, however, form no part of my invention and are common in the art, and my invention contemplates merely that the body portion shall be of a metallic character as above pointed out.

Extending longitudinally of the body portion 4 and located upon one side thereof is a tread or flange portion 5 adapted to contact with the flange of a car wheel. This flange portion of my improved shoe is composed of a non-metallic substance or composition, or of a composition made up for the most part of non-metallic ingredients, although the

composition used may contain a metal in a finely divided form, such for example, as comminuted iron chips, borings, etc. In such a case, however, the predominating characteristic of the composition from which the flange portion of the shoe is formed is still non-metallic, notwithstanding the ingredient of finely divided metal contained in it. This non-metallic flange portion extends throughout the entire length of the shoe so that there is no portion of the flange of the shoe made of metal and in contact with the flange of the wheel when the shoe is in use.

I have in the accompanying drawing, illustrated the body portion 4 and flange portion 5 of my improved brake shoe as being both supported by a wrought metal plate 6 bent and shaped into proper form, and which plate is commonly referred to as a steel back in the art. This plate is bent and pressed into suitable form as by means of dies, and is provided with a depending portion or wall 7 extending throughout the length of the shoe and downwardly toward the wearing face thereof, from which it will be obvious that a recess or pocket is formed between the downwardly extending side wall 7 of the back and the adjacent side face of the body portion 4 within which the non-metallic flange portion 5 of the shoe above referred to is located.

The body portion 4 of the shoe will ordinarily be secured to the wrought iron or steel back 6 by placing the back in a suitable mold and pouring molten metal from which the body is formed onto the back, whereby the back becomes embedded in the rear portion of the said body, which is a common and well known process used in the manufacture of brake shoes. The article thus produced will have a recess or pocket between the depending portion 7 of the back and the adjacent side wall of the body portion within which the substance or composition which forms the non-metallic flange portion of the shoe will be placed.

I prefer to mix the ingredients from which the flange portion of the shoe is formed with a liquid substance to thereby produce a plastic composition which may be placed in the pocket above referred to and pressed in place as by means of a suitable press, to thereby produce a compact non-metallic flange portion for the shoe and to secure intimate contact between the composition and the walls of the recess or pocket within which it is located. The non-metallic composition may, however, be first formed into a block of proper form and inserted as a whole into the recess between the side of the body portion and the depending wall 7 of the back and secured in place in any appropriate manner; or, if desired, I may place both a molded block,

which is to form the non-metallic flange portion of the shoe, and the back 6, in a suitable mold, and pour molten metal from which the body portion is formed thereinto in the manner above referred to, in which case the shoe when taken from the mold has the non-metallic flange portion in place, and is ready for immediate use.

My improved brake shoe is supported from the usual hanger or brake head by means of an attaching lug 8 of any particular form and which is not specifically described, as the particular features of the attaching lug form no part of my invention, and any suitable attaching lug may be used.

It will thus be seen that I have produced a flanged brake shoe having a metallic body portion, or a body portion the distinguishing characteristics of which are metallic, adapted to contact with the tread portion of the wheel, and a non-metallic flange portion adapted to contact with the flange of the car wheel; and, while I have illustrated and described the shoe as having a steel back for the purpose of securing the body portion and flange portion together to thereby form a single unitary shoe, I am aware that these two parts may be held in proper relation to one another to thereby form a complete brake shoe by means other than the steel back referred to so long as the distinguishing features of my invention are retained, that is so long as the resulting shoe is provided with a metallic body portion adapted to contact with the tread of the wheel and with a flange portion formed entirely from a non-metallic substance or composition and adapted to contact with the flange of the wheel.

Having thus described and explained my invention, I claim and desire to secure by Letters Patent:

1. A flanged brake shoe comprising a metallic body portion adapted to contact with the tread of a car wheel; and a flange portion composed of non-metallic material and adapted to contact with the flange of the wheel.

2. A flanged brake shoe comprising a metallic body portion adapted to contact with the tread of a car wheel; and a non-metallic flange portion located at one side of said body portion and extending parallel therewith and throughout the entire length of the shoe and adapted to contact with the flange of the wheel.

3. A flanged brake shoe comprising a metallic body portion adapted to contact with the tread of a car wheel; and a non-metallic flange portion extending throughout the entire length of the shoe and adapted to contact with the flange of the wheel.

4. A flanged brake shoe comprising a metallic body portion adapted to contact with the tread of a car wheel; a flange portion

composed of non-metallic material and adapted to contact with the flange of the wheel; and a supporting back for supporting both of said portions.

5 5. A flanged brake shoe comprising a metallic body portion adapted to contact with the tread of a car wheel; a flange portion composed of non-metallic material and adapted to contact with the flange of the
10 wheel; and a supporting back for supporting both of said portions, said back having a depending wall extending longitudinally of the shoe and which serves to support one side of said non-metallic flange portion.

15 6. A flanged brake shoe comprising a metallic body portion adapted to contact with the tread of a car wheel; and a supporting back for supporting said body portion and having a depending wall extending longitudinally of the shoe and spaced apart from
20 one side of said body portion, the space between said body portion and depending wall

being filled with a non-metallic substance shaped to form the flange portion of the shoe.

25 7. A flanged brake shoe comprising a metallic body portion adapted to contact with the tread of a car wheel; a supporting back for supporting said body portion and having a depending wall extending longitudinally of the shoe and spaced apart from one side of said body portion; and a mass
30 of non-metallic substance located between said depending wall and the adjacent side of said body portion and which forms the flange portion of the shoe. 35

Signed at Suffern in the county of Rockland and State of New York this 20th day of Feby. A. D. 1913.

HARRY JONES.

Witnesses:

CHAS. C. MOORE,
JOHN F. BRADY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."