FITZ WILLIAM SARGENT.

COMPOSITE FACE BRAKE SHOE.

APPLICATION FILED AUG. 19, 1911.

1,030,491. Patented June 25, 1912.

Fig. 1.

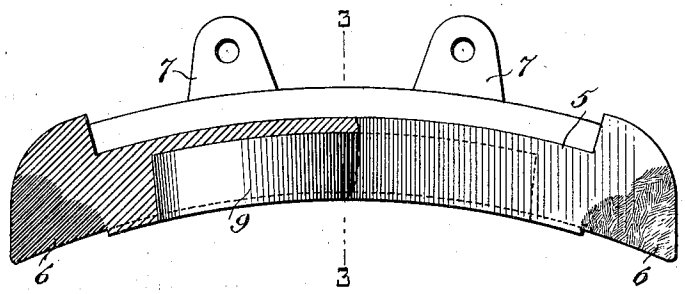


Fig. 2.

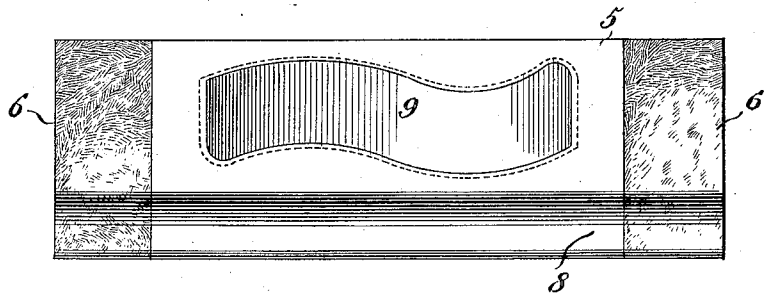


Fig. 3.

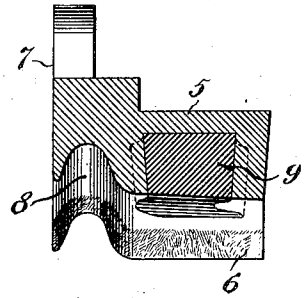
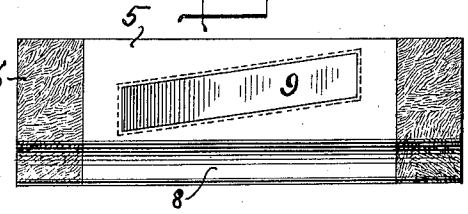


Fig. 4.



WITNESSES

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COMPOSITE-FACE BRAKE-SHOE.

1,030,491. Specification of Letters Patent. Patented June 25, 1912.

Application filed August 19, 1911. Serial No. 644,939.

To all whom it may concern:

Be it known that I, FITZ WILLIAM SARGENT, a citizen of the United States, and a resident of Mahwah, in the county of Bergen and State of New Jersey, have made and invented certain new and useful Improvements in Composite-Face Brake-Shoes, of which the following is a specification.

My invention relates to an improvement in brake shoes the object of the same being to provide a composite face brake shoe having a body formed from cast metal, such as cast iron, with an insert composed entirely, or principally, of a non-metallic substance or substances, contained within a recess or pocket formed in the wearing face thereof, so that the face of the shoe will comprise the cast metal of the body and the composition insert said insert extending in a diagonal or curved path across the face of the shoe in order to prevent the side edges of the pocket from wearing or cutting grooves in the tread of the wheel with which the shoe is used.

A brake shoe, the face of which is made up partly of cast metal and partly of an insert which is non-metallic in character, possesses frictional or braking qualities, and also wearing qualities or qualities of endurance, to a degree not present in shoes the wearing face of which is either entirely metallic or entirely non-metallic, and the arrangement of the insert diagonally in the face of the shoe in accordance with my invention avoids the formation of grooves in the tread of the wheel.

With the above and other objects in view, my invention consists in the improved brake shoe illustrated in the accompanying drawing and hereinafter 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 wherein the preferred embodiment of my invention is illustrated; Figure 1 is a view showing my improved brake shoe partly in side elevation and partly in section: Fig. 2 is a view showing the face of the shoe: Fig. 3 is a view showing a section upon a transverse plane indicated by the line 3—3, Fig. 1, and; Fig. 4 is a view showing the face of a shoe in which the shape of the composition insert is slightly modified.

In the drawing 5 represents the body portion of my improved shoe, the same being formed from cast metal, such for example as cast iron, the end portions 6—6 of the same being preferably chilled to thereby lend to the shoe its increased braking and lasting qualities. The body 5 is provided with lugs 7, whereby it may be secured to a brake head, or equivalent support.

My invention is illustrated as embodied in a brake shoe having a flange portion 8, adapted to contact with the flange of a wheel, although it will be understood that it is equally applicable to both flanged and unflanged shoes. The body portion 5 is provided with a recess or pocket in its face which is filled with a mass of non-metallic or semi-metallic material 9, forming the insert hereinbefore referred to, the latter being forced, while in a plastic condition, into the recess after the shoe is formed, and allowed to harden therein; or it may be first formed into a block, and then placed in the mold in which the shoe is cast. The recess in which the composition insert is contained is commonly enlarged at its bottom, as shown, in order that it may be firmly held or embedded in place within the body of the shoe. The insert 9 extends longitudinally of the body portion of the shoe and preferably throughout substantially the entire distance between the chilled end portions thereof, and in a diagonal direction across the face, so that the side edges of the pocket and insert will not wear grooves in the tread of the wheel. The wear upon the tread of the wheel due to the shoe is thus uniformly distributed and the tread portion kept smooth and free from grooves. The side walls of the recess in which the composition is contained are preferably curved substantially as shown in Figs. 1 to 3, although they may be straight as shown in Fig. 4, the said insert, however, extending diagonally across the face of the shoe in both cases.

The ingredients from which the composition wherewith the recesses or pockets are filled may be varied within wide limits without sacrificing the advantages above enumerated. I, however, recommend a composition made up of the following ingredients in approximately the quantities stated, as the best

with which I am acquainted, and as one which I have found to produce satisfactory results in practical use:

Pulverized iron ore	15	lbs.
Pitch	6	"
Asphalt	7	"
Fire clay	8	"

these ingredients being mixed in a heated condition and forced into the recesses in the face of the shoe under pressure.

While I have illustrated in the drawings the insert as being contained within that portion of the shoe which contacts with the tread of the wheel, it will be understood by those skilled in the art, without further description or illustration, that, if desired, in flanged shoes the insert may be contained within that portion of the shoe contacting with the flange of the wheel; or may extend from the tread of the shoe into the flange, or from the flanged portion of the shoe into the tread thereof; or, if desired, a recess may be formed in the tread of the shoe, and also a separate recess formed in the flange of the shoe, it being understood, of course, that in either and all of the above instances, the walls of these recesses or pockets containing a non-metallic insert shall be irregular in outline, as hereinabove described and for the purpose set forth.

What I claim is:

1. A brake shoe the ends of which are chilled, said shoe having a recess in the wearing face thereof, extending between said chilled portions and longitudinally of the shoe, and filled with a non-metallic substance, the side walls of said recess being irregular in outline.

2. A brake shoe comprising a cast metal body the end portions of which are chilled, said body having a recess in its face extending between said chilled portions and longitudinally of the face of the shoe, and filled with a non-metallic substance, the side walls of said recess being curved.

3. A brake shoe comprising a cast metal body having a recess extending longitudinally of the shoe and longitudinally of the face thereof, said recess being filled with a non-metallic substance composed of pulverized iron ore, pitch, asphalt, and fire-clay in substantially the proportions stated.

Signed at New York, borough of Manhattan, in the county of New York and State of New York, this 16th day of August, A. D. 1911.

FITZ WILLIAM SARGENT.

Witnesses:
A. V. WALSH,
WILLIAM GOEBEL.