

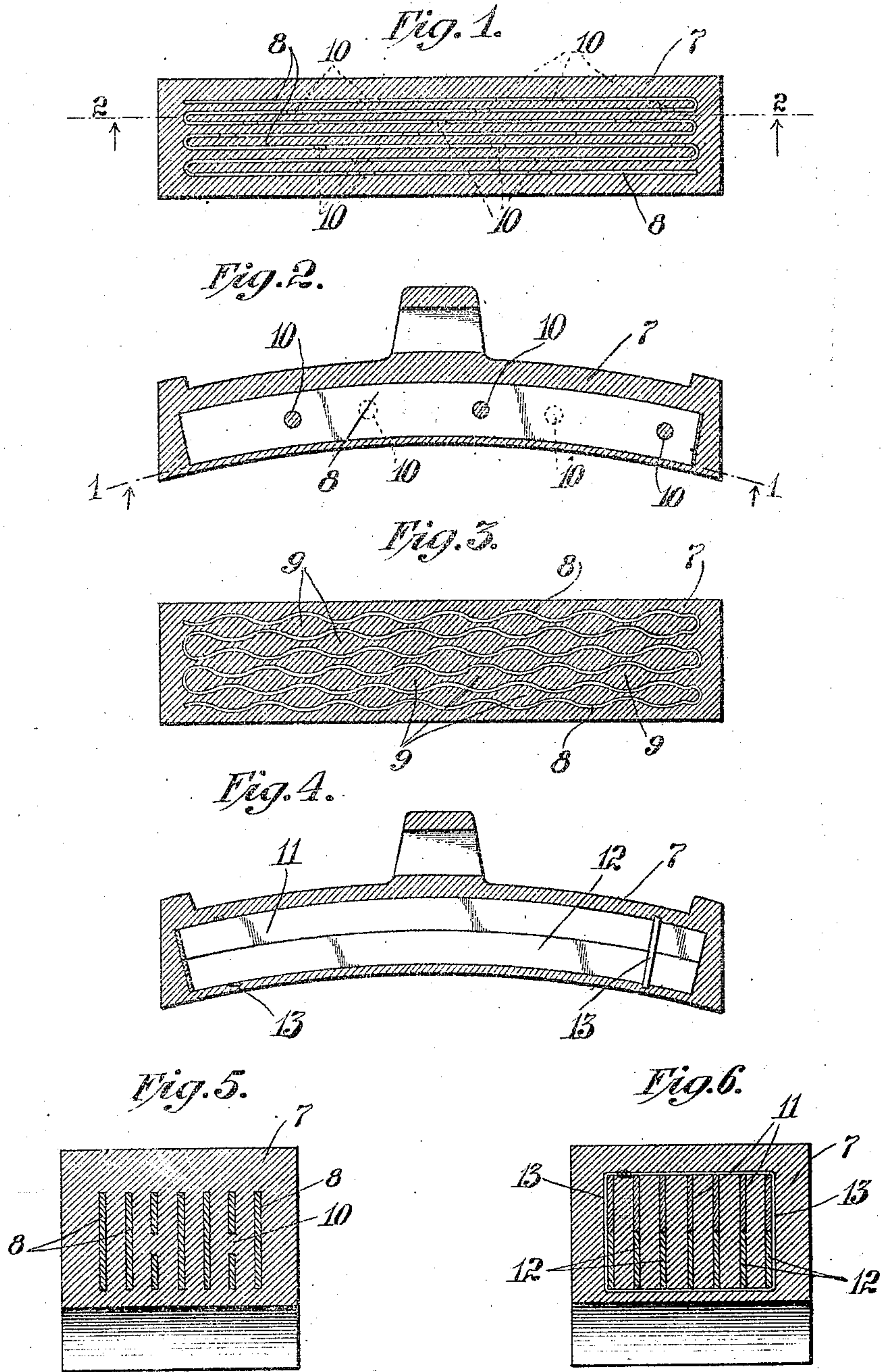
H. P. WINGERT & H. JONES.

BRAKE SHOE.

APPLICATION FILED FEB. 10, 1911.

995,049.

Patented June 13, 1911.



Attest:

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UNITED STATES PATENT OFFICE.

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BRAKE-SHOE.

995,049.

Specification of Letters Patent. Patented June 13, 1911.

Application filed February 10, 1911. Serial No. 607,788.

To all whom it may concern:

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

Our invention relates to an improvement in brake shoes, and more particularly to that kind or type thereof comprising a body and inserts of relatively hard and soft metal, whereby to secure a wearing face composite in character, the object of the invention being to improve upon the construction of shoe generally known and referred to as the "Diamond S" shoe, (wherein the insert is formed from a bundle, or several layers of expanded metal), by materially reducing the cost thereof, and at the same time imparting to the completed shoe such additional strength as will insure the holding together of the sections of the body should the latter become cracked or fractured in service.

A further object of the invention is to avoid any and all danger of the burning or oxidation of the insert during the pouring of the molten body metal around it during the process of casting, while at the same time preserving all the qualities and efficiency characteristics of the "Diamond S" shoe.

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 drawing accompanying and forming a part of this specification, and wherein our improved brake shoe is illustrated: Figure 1 is a view showing our improved brake shoe upon a section indicated by the line 1—1, Fig. 2; Fig. 2 is a view showing a section upon a plane extending longitudinally of the shoe as indicated by the line 2—2, Fig. 1; Fig. 3 is a view similar to Fig. 1, but showing a modified form of shoe; Fig. 4 is a view similar to Fig. 2, but showing

another form of shoe; Fig. 5 is a view showing the shoe shown in Fig. 1 upon a transverse plane, and Fig. 6 is a view showing the shoe shown in Fig. 4 upon a transverse plane.

In the drawing, 7 is the body portion of our improved brake shoe, the same being formed from cast metal, and preferably from cast iron, selected with reference to securing a maximum braking action with minimum wear of the shoe.

8 is a strip or ribbon of wrought iron, mild steel, or similar material bent or doubled upon itself so as to provide a plurality of portions disposed adjacent one another or lying side by side, and extending, preferably, longitudinally of the brake shoe, so that the wearing face of the shoe is made up of the cast metal body portion and the edges of the several parts of the strip 8. The strip 8 may be plain, as shown in Fig. 1, so that the several parts thereof are parallel, or corrugated as shown in Fig. 3, in which case the strip is so bent and arranged as to divide the cast metal body of the shoe into lenticular portions or areas such as 9, so that the tread of the wheel against which the shoe bears will be subjected to the action of both the cast metal of the body portion and the edge of the strip, whereby the wheel is worn uniformly and the formation of grooves therein avoided. The strip 8 is preferably provided with a series of holes or openings 10, spaced along the strip and through which the cast metal of the body portion flows as the shoe is formed, whereby the insert formed by the strip is more securely held in position, and transverse strength imparted to the shoe, the portions of the cast body upon opposite sides of the several parts of the strip being tied together by the portions thereof which extend through the holes.

In the embodiment of our invention illustrated in Figs. 1, 2 and 3, a single strip of metal is embedded in the body portion of the shoe. It is, however, sometimes desirable to provide two or more strips located one over the other as shown at 11, 12, Fig. 4, the strips being preferably bound together.

into a unitary insert by means of bands or wires 13, the individual strips being either plain, as in Fig. 1, or corrugated as in Fig. 3.

In the manufacture of our improved brake shoe the strip, which constitutes the metallic insert, is first bent into the desired form, the insert being thus a single unitary structure, as will be understood, and the same placed in the mold in which the shoe is to be formed; the cast metal of the body portion is then poured around it, the insert thus becoming securely embedded and anchored in the body portion of the shoe.

From the foregoing it will be understood that by reason of the relatively large amount of metal contained in the strip or ribbon comprising the insert, the danger of burning or destroying the same while pouring the molten body metal around it is avoided, such destruction often occurring in the case of the expanded metal insert, by reason of the finely divided metal comprising the same. Furthermore, it will be noticed that the distribution of the metal comprising the insert, especially in its corrugated form, is very similar to that of the expanded metal insert, in that the alternate bends, folds or corrugations of the metal strips approach each other, and the intermediate portions separated, in contradistinction to arranging the bends or folds of the corrugated strips to lie parallel.

In the construction of shoes as above described, we have found that while preserving all of the valuable characteristics of the "Diamond S" insert, the cost thereof is materially reduced, while at the same time the insert in the form of a flattened strip or ribbon of metal adds materially to the strength of the finished shoe, and overcomes any and all danger of the sections or fragments of the shoe separating, should it become cracked or fractured in service.

Having thus described our invention, we claim and desire to secure by Letters Patent:

1. A brake shoe comprising a body portion formed from cast metal, and a continuous flat strip or ribbon bent or doubled upon itself so as to provide a plurality of portions disposed adjacent one another, said strip being corrugated and embedded in the body portion of the shoe.

2. A brake shoe comprising a body portion formed from cast metal, and a continuous strip or ribbon bent or doubled upon itself and extending a plurality of times longitudinally of the shoe, said strip being embedded in the body portion of the shoe and located adjacent the wearing face thereof, so that the body portion and strip are simultaneously worn away when the shoe is in use.

3. A brake shoe comprising a body portion formed from cast metal, and a continuous strip or ribbon bent or doubled upon itself so as to provide a plurality of portions extending longitudinally of the shoe, said strip being embedded in the body portion of the shoe and located adjacent the wearing face thereof, so that the body portion and strip are simultaneously worn away when the shoe is in use.

4. A brake shoe comprising a body portion formed from cast metal, and a continuous strip or ribbon bent or doubled upon itself and extending longitudinally of the shoe, said strip being corrugated and having a series of holes spaced along its length and embedded in the body portion of the shoe.

5. A brake shoe comprising a body portion formed from cast metal, and a continuous strip or ribbon bent or doubled upon itself so as to provide a plurality of portions disposed adjacent one another and which portions extend longitudinally of the shoe, said strip having a series of holes spaced along its length, and embedded in the body portion of the shoe.

6. A brake shoe comprising a body portion formed from cast metal, and a continuous strip or ribbon bent or doubled upon itself so as to provide a plurality of portions disposed adjacent one another, said strip being corrugated and embedded in the body portion of the shoe, the position of adjoining portions thereof being such that the face of the shoe is divided into a plurality of lenticular areas by said strip.

7. A brake shoe formed from cast metal and the wearing face of which is divided into a plurality of lenticular areas, and a continuous strip or ribbon embedded in said shoe and separating said areas from one another.

8. A brake shoe of the character described, comprising a body portion, and an insert embedded therein, said insert comprising a plurality of corrugated portions, the alternate bends approaching each other, and the intermediate bends separating from each other, substantially as described.

9. A brake shoe of the character described, comprising a body portion, and an insert embedded therein, said insert consisting of a continuous strip or ribbon of corrugated metal, the alternate corrugations approaching each other, and the intermediate corrugations separating from each other, substantially as described.

10. A brake shoe of the character described comprising a body portion, and an insert embedded therein, said insert consisting of a continuous strip or ribbon of metal bent or folded to provide a plurality of por-

tions, and corrugated, the alternate corruga-
tions approaching each other, and the inter-
mediate corrugations separating from each
other, each portion of said strip extending
5 longitudinally of the shoe, and practically
the entire length thereof.

Signed at Suffern, in the county of Rock-

land and State of New York, this third day
of February, 1911.

HOWARD P. WINGERT.

HARRY JONES.

Witnesses:

F. H. HARTWELL,

FRANK OSBORN.

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