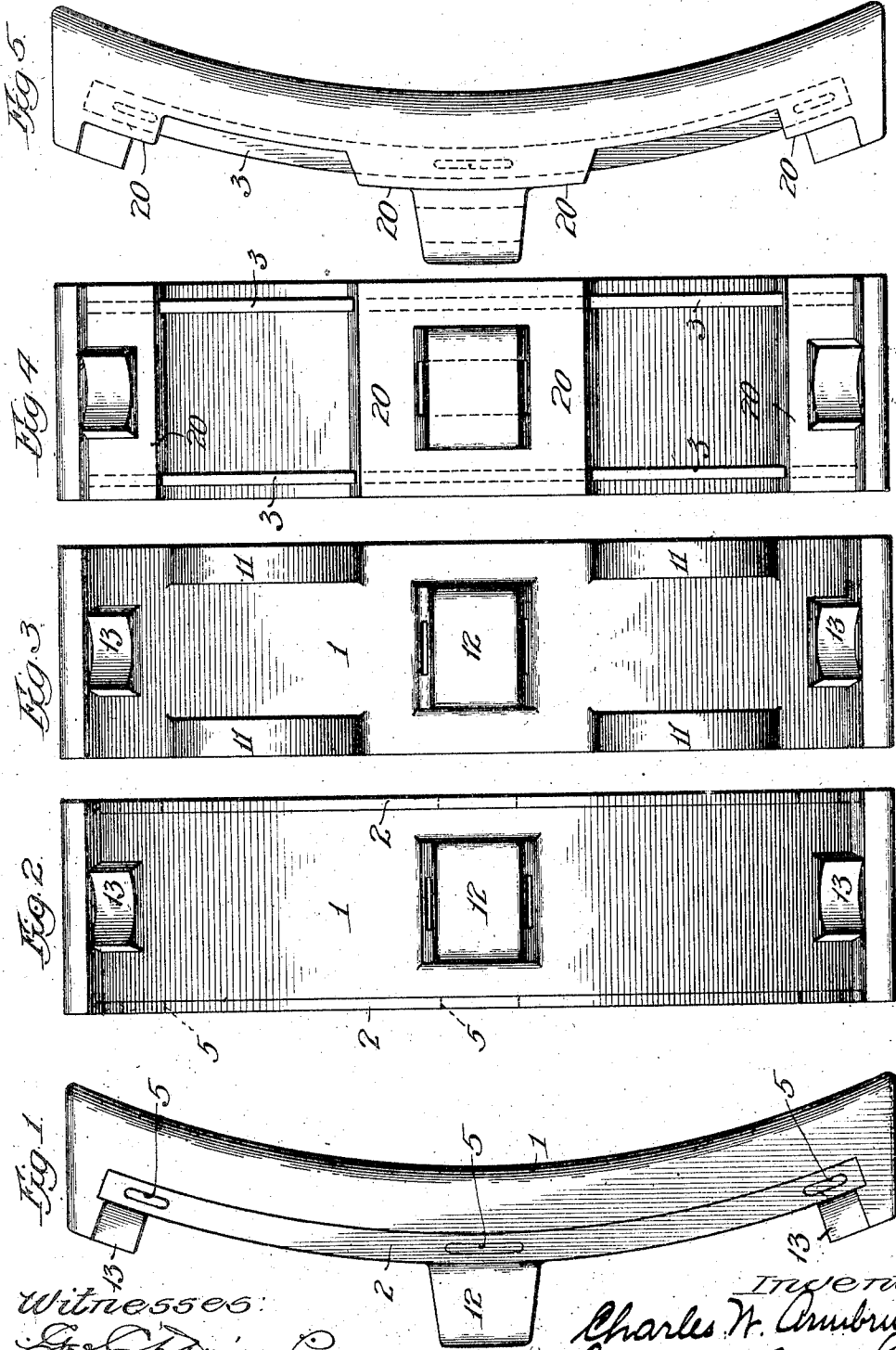


C. W. ARMBRUST.
 BRAKE SHOE.
 APPLICATION FILED OCT. 14, 1910.

Patented Sept. 5, 1911.

1,002,480.

2 SHEETS—SHEET 1.



Witnesses:
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 M. A. Kiddie.

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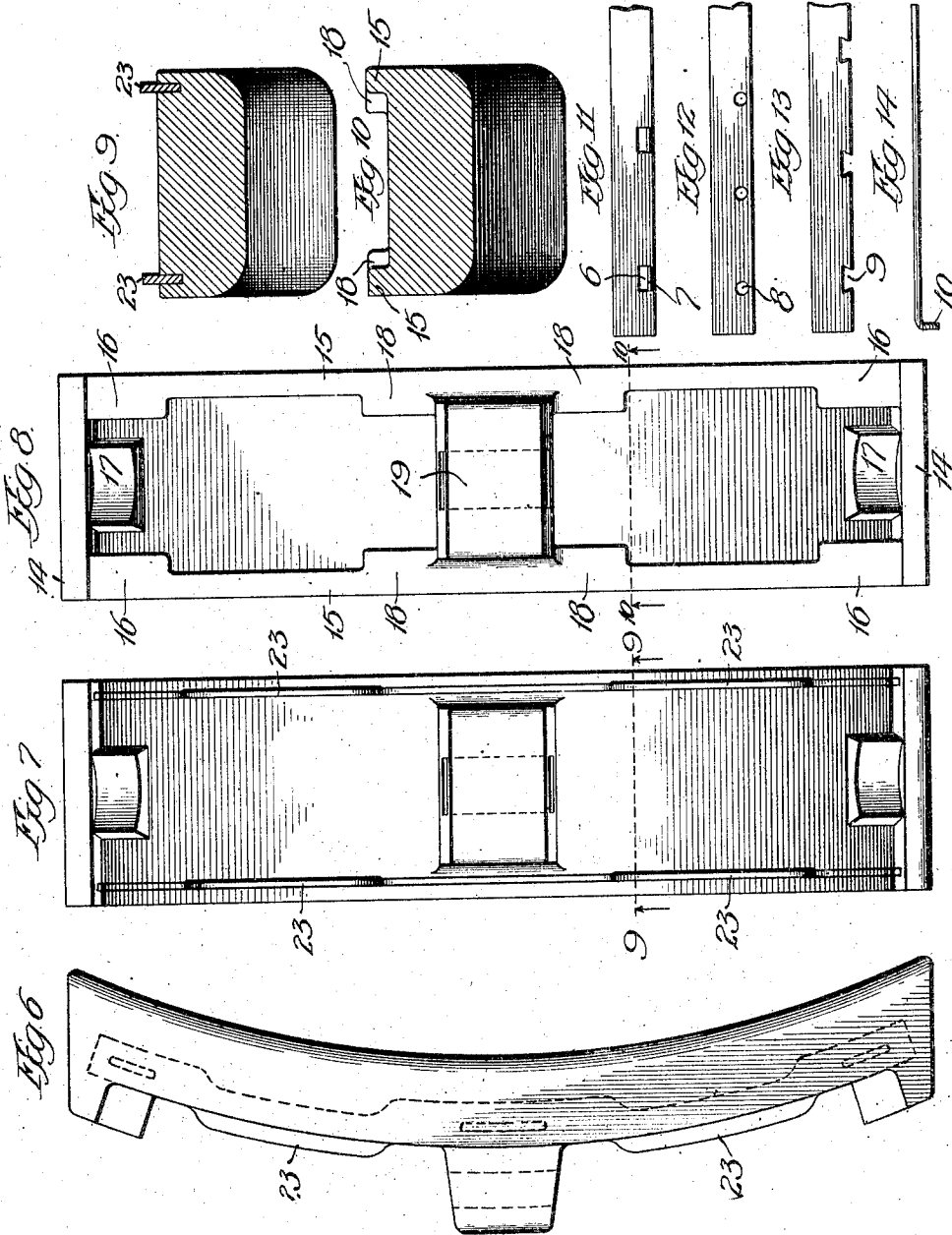
BRAKE SHOE.

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Witnesses.

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UNITED STATES PATENT OFFICE.

CHARLES W. ARMBRUST, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-FOURTH TO SYDNEY STEIN, OF CHICAGO, ILLINOIS.

BRAKE-SHOE.

1,002,480.

Specification of Letters Patent.

Patented Sept. 5, 1911.

Application filed October 14, 1910. Serial No. 586,990.

To all whom it may concern:

Be it known that I, CHARLES W. ARMBRUST, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Brake-Shoes, of which the following is a specification.

This invention relates to novel improvements in brake shoes and it can be embodied in shoes of the ordinary solid cast iron type or in the various forms of composite shoes which are now familiar in the art.

The object of the invention is to reinforce and strengthen a shoe in a simple and inexpensive manner to reduce the liability of the shoe fracturing in handling and in service and to hold the parts together in case of fracture so that the shoe may be continued in service.

With these and other ends in view the invention contemplates the provision of strengthening means at or adjacent to the back of the shoe and extending longitudinally thereof at or adjacent to the sides whereby the body of the shoe is greatly strengthened and reinforced.

In the accompanying drawings Figure 1 is a side view and Fig. 2 a back view showing one embodiment of my invention; Fig. 3 is a back view showing another embodiment of the invention. Fig. 4 is a back view and Fig. 5 a side view showing still another embodiment of the invention, the shoe being provided with integral spacing lugs. Fig. 6 is a side view and Fig. 7 a plan view showing another embodiment of the invention. Fig. 8 shows the invention embodied in a form somewhat similar to that of Fig. 3 but with the strengthening ribs constructed to form spacing lugs. Fig. 9 is a transverse sectional view on the line 9-9 of Fig. 7. Fig. 10 is a transverse sectional view on the line 10-10 of Fig. 8. Figs. 11 to 14, inclusive, show different forms of the inserted strengthening strips.

Referring to the drawings, 1 designates the body of the shoe which may be of the common solid cast iron type or of any composite type with which my invention may be adapted, with or without such modifications as will readily occur to those skilled in the art for such adaptations.

I have, for purposes of illustration, shown the invention in its various forms embodied in a car shoe of well-known type, but it will

be distinctly understood that I do not thereby restrict myself to this particular embodiment for the invention may be employed with equally satisfactory results in car shoes of other types and in various forms of locomotive driver shoes.

Two reinforcing and strengthening strips 2 are embedded on edge in the shoe during the casting operation at or adjacent to its back and at or adjacent to its sides. These strips extend longitudinally of the shoe, approximately from end to end thereof, the particular length being varied to meet different conditions and requirements. These strips may be embedded in the shoe at its sides, as shown in Figs. 1 and 2, or between its sides, as indicated by 3 in Fig. 4. The strips may be made of any suitable metal, such as steel, wrought iron or malleable iron, and they may be variously constructed to unite and make locking engagement with the cast iron of the body. For example, they may be provided with longitudinal slots 5, as shown in Fig. 1, or with openings 6 and lips 7, as shown in Fig. 11, or with a plurality of openings 8, as shown in Fig. 12, or with recesses 9, as shown in Fig. 13, or the ends of the strips may be bent to form hooks 10, as shown in Fig. 14. Various other means may be employed for effecting a locking engagement between the strips and the body of the shoe. The strips may be set in the shoe so that their outer edges will be flush with the back of the body, as shown in Figs. 1 and 2, or they may be set to project beyond the back of the body, as shown in Figs. 6, 7 and 9.

Instead of embedding strips, such as 2 or 3, in the body of the shoe, as hereinbefore described, I may provide strengthening strips 11 integral with the body of the shoe on the back thereof as shown in Fig. 3. These strips are located at or adjacent to the sides of the shoe and they may terminate between the attaching lug 12 and the guide lugs 13, as shown in Fig. 3, to accommodate the brake head, or they may be extended throughout the length of the shoe from one end lug 14 to the other, as shown at 15 in Fig. 8, and broadened at 16 adjacent to the guide lugs 17, and at 18 adjacent to the attaching lug 19 to form bearing or spacing lugs for the brake head. I may also embody the embedded strips in a shoe with spacing lugs 20, as shown in Figs.

4 and 5, and I may make the strips in regular form with curved edges, as shown in Figs. 1, 2, 4 and 5, or in irregular form, as shown, for example, in Figs. 6 and 7. In the latter figures the strips are made in a wavy or tortuous form, the ends 21 and the central portion 22 being depressed and the intermediate portions 23 elevated so that the latter portions will project more or less beyond the back of the body of the shoe, whereas the ends and central portions are buried in the body with their edges exposed or not as desired.

The invention provides a simple means for reinforcing and strengthening a brake shoe so that the liability of fracture is greatly reduced and thereby the longevity of the shoe is increased and the cost of maintenance is lowered. The embedded strips will also hold the parts of the shoe together in event of fracture and thereby enable the shoe to be continued in service besides avoiding the liability of accidents by preventing the broken portions of the shoe from falling upon the track where they may enter a switch or a frog and cause disaster.

What I claim and desire to secure by Letters Patent is:

1. A brake shoe comprising reinforcing and strengthening means projecting outward from the back of the body of the shoe and extending longitudinally thereof at or adjacent to its sides and connected throughout their length with the body of the shoe.
2. A brake shoe comprising reinforcing

and strengthening means connected throughout their length with the body of the shoe and projecting outward from the back of the body of the shoe between the attaching lug and the end lugs and extending longitudinally of the shoe at or adjacent to its sides.

3. A brake shoe comprising a narrow strip extending on edge approximately from end to end of the shoe parallel with the side thereof and connected throughout its length with the body of the shoe at or adjacent to its back and removed from the wearing face of the shoe.

4. A brake shoe comprising a narrow strip extending on edge approximately from end to end of the shoe and parallel with the side thereof at or adjacent to its back and projecting outwardly from the body of the shoe between the attaching lug and the end lugs.

5. A brake shoe comprising a pair of narrow strips extending approximately from end to end of the shoe and embedded in the body of the shoe at or adjacent to its back and parallel with the sides thereof, said strips projecting outward from the back of the body of the shoe between the attaching lug and the end lugs and having means to make locking engagement with the body of the shoe.

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Witnesses:

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