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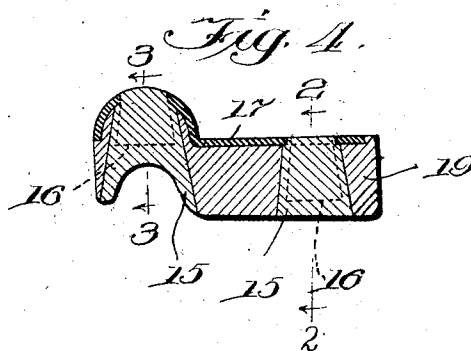
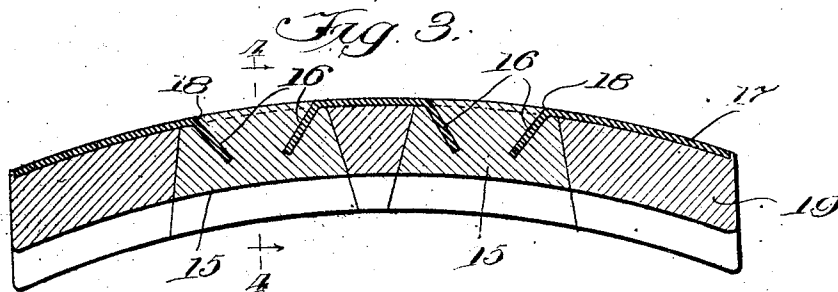
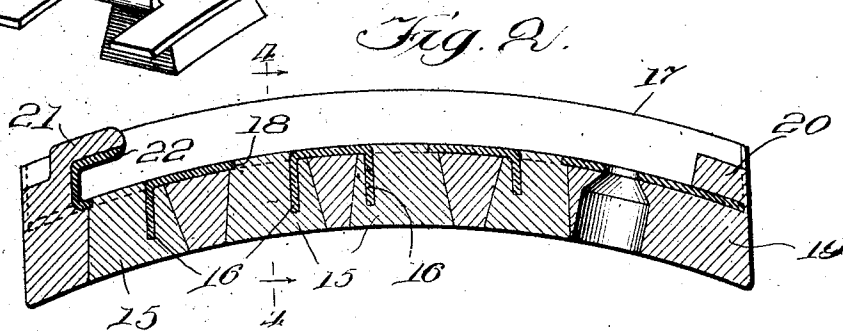
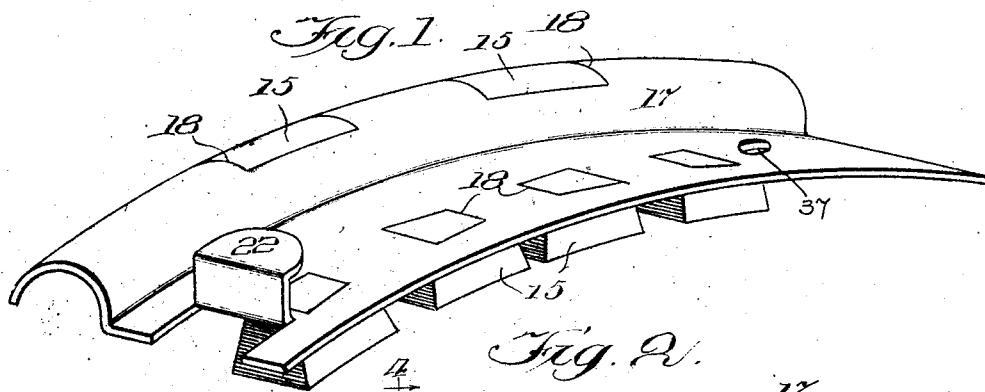
No. 822,924.

PATENTED JUNE 12, 1906.

F. P. COLLIER.
BRAKE SHOE.

APPLICATION FILED FEB. 20, 1905.

3 SHEETS—SHEET 1.



Witnesses:

H. S. Gaither

M. A. Kiddie

Inventor:

Frank P. Collier

by Wm. O. Bell
att'y

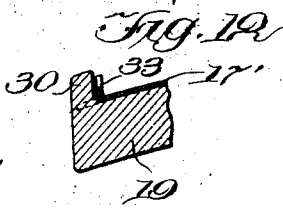
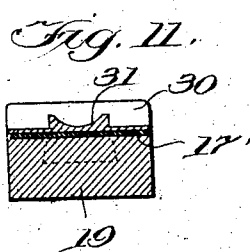
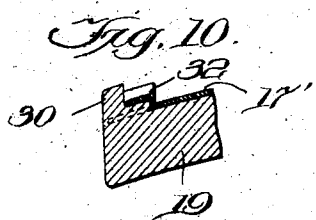
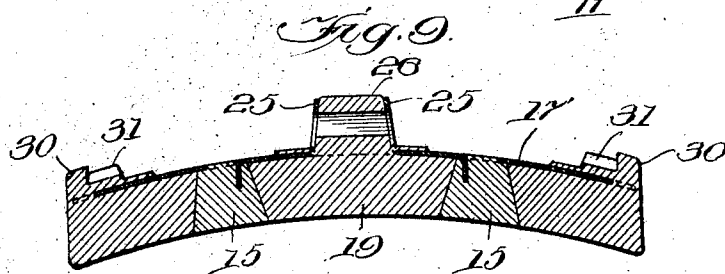
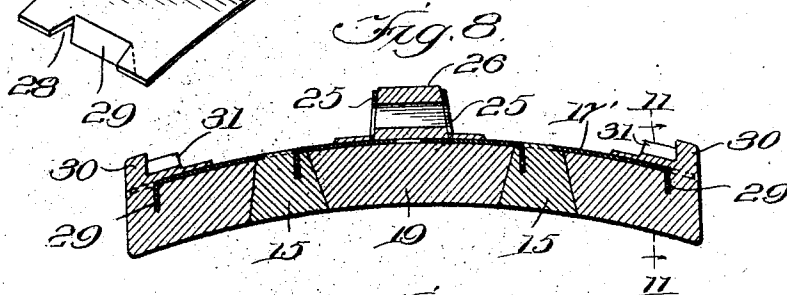
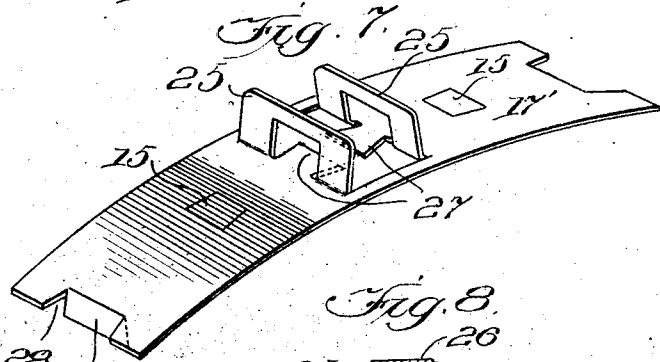
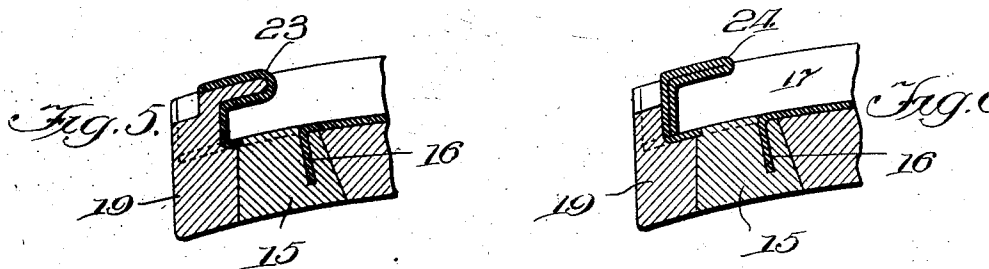
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3 SHEETS—SHEET 2.



Witnesses:
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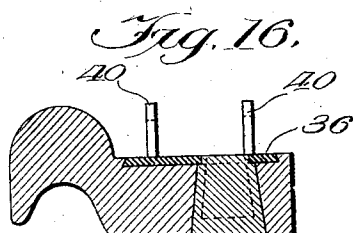
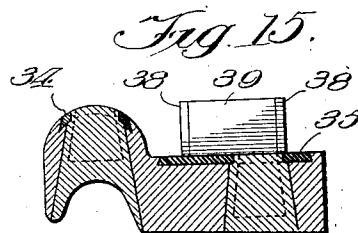
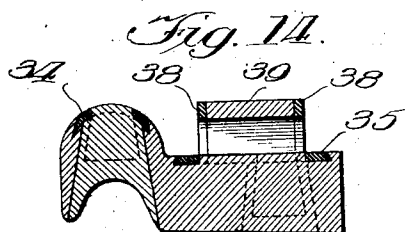
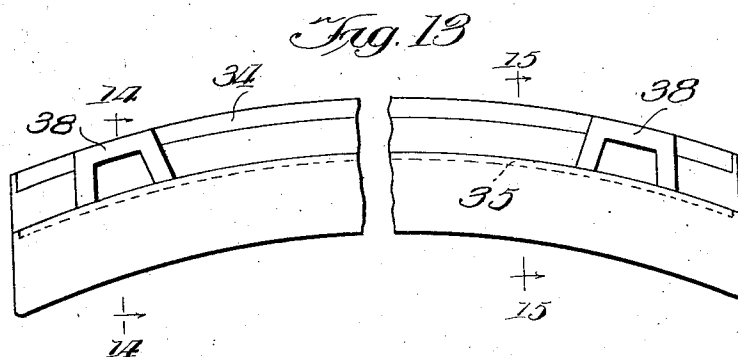
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3 SHEETS—SHEET 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

FRANK P. COLLIER, OF WILMETTE, ILLINOIS

BRAKE-SHOE.

No. 822,924.

Specification of Letters Patent.

Patented June 12, 1906.

Application filed February 20, 1905. Serial No. 246,377

To all whom it may concern:

Be it known that I, FRANK P. COLLIER, a citizen of the United States, residing at Wilmette, 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 particularly to composite brake-shoes of that type in which one or more insert-blocks of a different metal than that of the body of the shoe is located in the wearing-face for the purpose of prolonging the life of the shoe or otherwise coacting with the metal of the body to produce certain results.

The objects of the invention are to securely lock and hold the insert-blocks in the body of the shoe, to strengthen the shoe and provide means other than the body for carrying the insert-blocks, and to reinforce and strengthen the attaching-lug.

It will be understood that the invention can be embodied in any of the numerous varieties of brake-shoes in common use, so far as it may be adaptable thereto, without departing from the scope of my invention; and in the drawings I have shown samples of locomotive and car shoes.

In the accompanying drawings, Figure 1 is a perspective view of the plate carrying the inserts for a locomotive-shoe. Figs. 2 and 3 are longitudinal sectional views on the lines 2-2 and 3-3 of Fig. 4. Fig. 4 is a transverse sectional view on the line 4-4 of Figs. 2 and 3. Figs. 5 and 6 are detail sectional views showing different constructions for an attaching-lug at the end of the shoe. Fig. 7 is a perspective view of a plate carrying the inserts for a car-shoe. Figs. 8 and 9 are longitudinal central sectional views showing different embodiments of the invention. Figs. 10 and 12 are detail sectional views showing different constructions of the plate for forming the guide-lugs. Fig. 11 is a transverse sectional view on the line 11-11 of Fig. 8. Fig. 13 shows two attaching-lugs and two plates. Fig. 14 is a sectional view on the line 14-14 of Fig. 13. Fig. 15 is a sectional view on the line 15-15 of Fig. 13. Fig. 16 is a view similar to Fig. 15, but without the plate at the flanged part of the shoe and showing the yokes forming the entire attaching-lug.

The insert-blocks 15 are cast upon or otherwise rigidly fastened to the lips 16, which are cut and stamped down from the back plate 17, and these insert-blocks are arranged to

completely close the openings 18 left in the plate by the downturned lips. The body portion 19 is then cast upon the inserts and against the under side of the back of the plate, the plate being somewhat shorter in length than the complete shoe, so that the body metal may flow up around the ends of the shoe to form the end lug 20 and the attaching-lug 21, Fig. 2. The lips 16 are dovetailed to hold the insert-blocks securely in place thereon, and the blocks are dovetailed to form a locking engagement with the body portion 19. Thus the insert-blocks are locked to the back plate and the body is locked to the blocks, so that the back plate, the blocks, and the body will all be securely locked together.

I may provide a hook 22 at the end of the back plate, Figs. 1 and 2, as a lining for and to strengthen the lug 21. In Fig. 5 I have shown this hook continued at 23 over the top of the lug, and in Fig. 6 I have shown the lug 24 formed entirely out of a part of the back plate, which is bent upon itself to make it strong and substantial.

The attaching-lug of car-shoes is generally located centrally between the ends thereof, and I provide the back 17, Fig. 7, with two upstanding yokes 25, cut and stamped out of the back to form an outside lining on each side of and to strengthen the cast part of the lug 26, Fig. 8, and protect it against accidental fracture during the handling of the shoe. The lips 27, left by stamping up the yokes, may be cut out, as shown in Fig. 9, and the yokes may be embedded in the cast-iron part of the lug, if desired.

At each end of the plate I may form an opening 28 by cutting and stamping down a lip 29, Figs. 7 and 8, or by removing the lip entirely, Fig. 9, to permit the body metal to flow up and form the end lugs 30 and the end guides 31 on the shoe, or I may cut and stamp the plate at its ends to form an offset 32, which constitutes the end guide, Fig. 10, or this end guide may be formed by cutting and stamping up a lip 33 to lie adjacent to the end lug 30, Fig. 12.

In Figs. 1 to 12, inclusive, I have shown a single plate for each shoe, covering substantially the entire back of the body; but I may make this plate in two parts 34 35, as shown in Figs. 13 to 15, inclusive, or I may employ a single plate 36, as shown in Fig. 16, located at one side of the flange. In Figs. 1 and 2 I have shown a shoe provided at one end with an attaching-lug and a bolt-hole 37 at its

other end; but I may provide attaching-lugs at both ends, as shown in Fig. 13. In Figs. 14 and 15 the yokes 38 are cut and stamped up longitudinally of the shoe, and the cast part 39 of the lug is located therebetween; but I may dispense with this cast part and employ the yokes 40 alone, as shown in Fig. 16.

In the preferred construction of the invention the body will be made of soft cast-iron and the insert-blocks harder than the body to form a composite wearing-face for the shoe; but I do not confine myself to the use of any particular kind or grades of metals for the body or the inserts. The interlocking engagement of the body with the inserts and of the inserts with the lips on the back plate serves to hold the parts of the shoe together in case of fracture, and the plate serves to strengthen the shoe, particularly when it is worn thin. The hook, which forms a lining for the attaching-lug located at the ends of a shoe, as well as the yokes lining the attaching-lug at the middle of the shoe, strengthens the lug and protects it from being easily fractured in handling. The plate is preferably narrower than and embedded in the body, as shown; but it may extend entirely across the shoe from side to side and substantially from end to end thereof. The ends of the plate may be extended through the ends of the

shoe and cut out in the manner shown in Fig. 9. I may make this plate of steel, wrought-iron, malleable iron, or any other suitable material, and it may carry any number of inserts disposed and arranged thereon in any desired manner.

Without limiting myself to the exact construction and arrangement of parts herein shown and described, what I claim, and desire to secure by Letters Patent, is—

1. A brake-shoe comprising a back plate, lips cut and stamped down from said plate, inserts locked on said lips and closing the openings in said plate, and a body cast around said inserts.

2. A brake-shoe comprising a back plate, a plurality of dovetailed inserts carried by said plate, a pair of yokes cut and stamped up from said plate, and a body cast around said inserts.

3. A brake-shoe comprising a back plate, lips cut and stamped down from said plate, inserts locked on said lips and closing the openings in said plate, a body cast around said inserts, and a pair of yokes cut and stamped up from said plate.

FRANK P. COLLIER.

Witnesses:

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