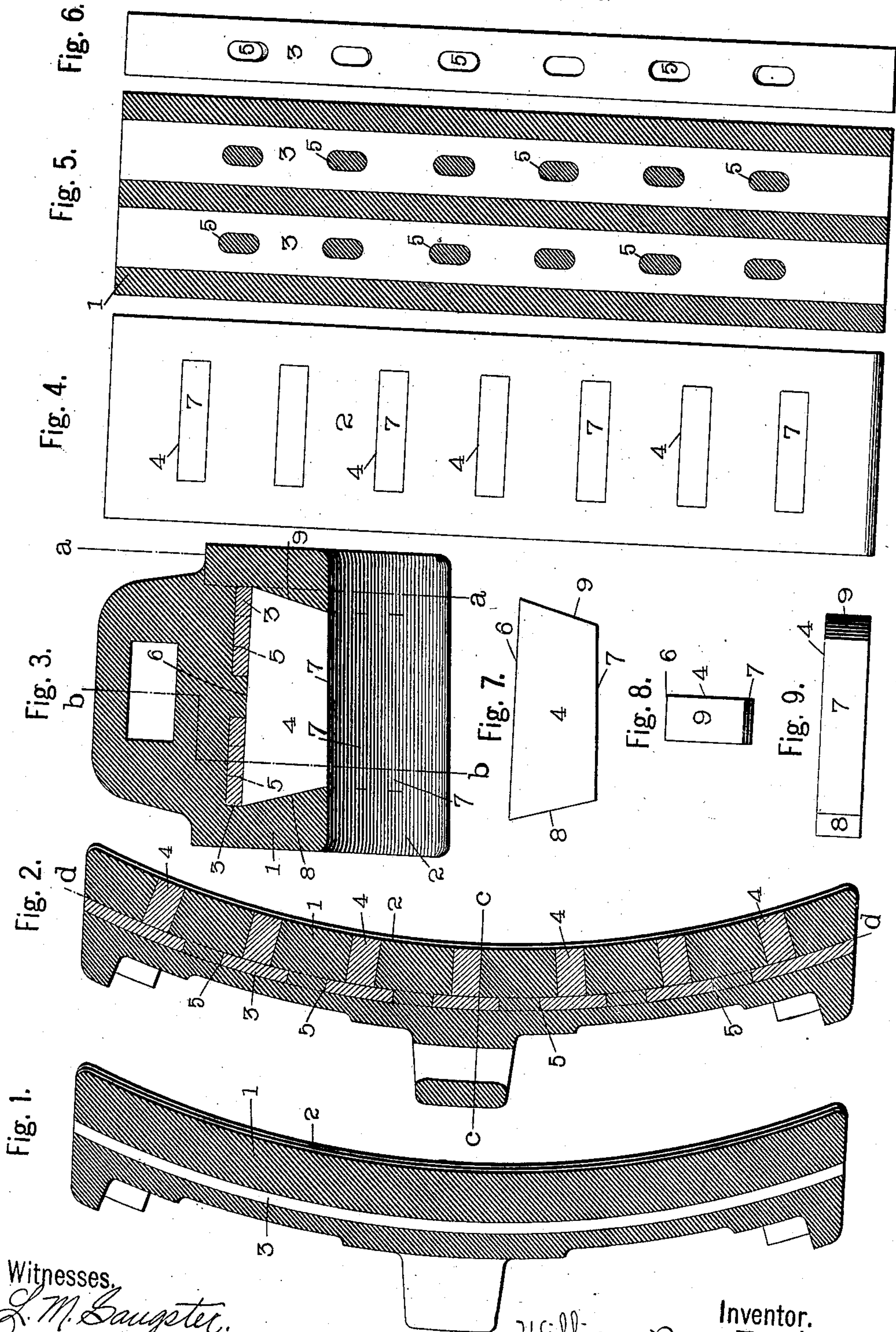


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PATENTED AUG. 14, 1906.

W. P. TAYLOR.  
BRAKE SHOE.

APPLICATION FILED DEC. 22, 1905.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

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## BRAKE-SHOE.

No. 828,348.

Specification of Letters Patent.

Patented Aug. 14, 1906.

Application filed December 22, 1905. Serial No. 292,931.

*To all whom it may concern:*

Be it known that I, WILLIAM PERRY TAYLOR, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Brake-Shoes, of which the following is a specification.

This invention relates to an improved railway brake-shoe of that class which comprises a body having a strengthening reinforcement embedded therein.

The principal object of the invention is to strengthen the shoe-body against both longitudinal and transverse strain.

The invention also relates to certain details of construction, all of which will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section through the improved brake-shoe on line *a a*, Fig. 3. Fig. 2 is a vertical longitudinal section through the improved brake-shoe on line *b b*, Fig. 3. Fig. 3 is an enlarged vertical transverse section through the improved brake-shoe on line *c c*, Fig. 2. Fig. 4 is a face view of the improved brake-shoe. Fig. 5 is a horizontal longitudinal section through the improved brake-shoe on the curved line *d d*, Fig. 2. Fig. 6 is a detached face view of the reinforcing-bar. Figs. 7, 8, and 9 are enlarged detached side, end, and bottom plan views of one of the inserts.

The preferred adaptation of the invention illustrated in the drawings comprises a body, one or more longitudinal reinforcements embedded in the body, and one or more transverse inserts in the body.

In referring to the drawings for the details of construction like numerals designate like parts.

The adaptation of this invention shown in the drawings embodies a brake-shoe of that type known as the "Master Car-Builders' standard" type, and it consists of a cast body 1, having a brake-face 2, which is curved in correspondence with the tread or perimeter of the car-wheel, two plate-like reinforcements 3, which are embedded in the shoe-body and extend longitudinally there-through near the top surface thereof, and a series of inserts 4, which are embedded at intervals in the shoe-body below the reinforcements 3.

The reinforcements 3 are practically hori-

zontal, except that they curve in correspondence with the curve of the cast body 1, and they are each provided with a series of slots or perforations 5, in which portions of the cast metal of the body fit and interlock to rigidly secure the reinforcements in place.

The inserts 4 are each preferably a flat metal plate having top and bottom edges 6 and 7, which extend at a slight angle to each other, side edges 8 and 9, which gradually diverge from each other from the bottom edge to the top, so that the top edge is wider than the bottom edge, and trapeziform faces which are parallel to each other. Each of these inserts is located in transverse position in the cast body, with its wider portion at the top, so that it is wedge-locked transversely in place therein and its lower or bottom edge extending through and on an even plane with the curved braking-face of the cast body.

The trapeziform faces of the inserts extend at right angles to the braking-face 2, so that they are vertical or nearly vertical in the cast body. The purpose of these inserts is not only to strengthen the cast body of the shoe in addition to the longitudinal reinforcements, but also to reduce or lessen the frictional grip of the brake-shoe upon the car-wheel sufficiently to prevent the complete stopping of the rotation of the wheel while the train is moving fast, and thereby obviate in a great measure the flattening of the wheel surface through wear from sliding upon the rail. This is accomplished by having the curved braking-face 2 of the shoe composed in part of comparatively smooth surfaces of the bottom edges of the inserts, which are arranged at intervals and extend transversely across said face and are separated by the rough frictional surfaces of the cast metal. In this construction the braking-face is formed of a transverse series of contrasting surfaces of metal in alternate sections of comparatively smooth and comparatively rough metal.

The plate-reinforcements 3 rest upon and are in contact with the top surface of the inserts, so that the reinforcements and inserts normally support and sustain each other.

The body is preferably cast of iron in the usual way around the reinforcements and inserts, which are in position in the mold before the molten metal is poured.

The reinforcements and inserts are usually



stamped or otherwise formed of wrought iron or steel, although other suitable metal may be used, if desired.

The advantages of this invention reside in reinforcing of the shoe both laterally and longitudinally.

In the following claims I use the words "cast body" as a generic term and intend broadly to include any suitable form of metal body which is cast or formed in any other desirable manner.

It will be obvious that my invention may be variously modified without departing from the spirit and scope thereof.

I claim as my invention—

1. A brake-shoe having a cast body, a longitudinal reinforcement in said body and a series of transverse inserts wedge-locked transversely in said body.

2. A brake-shoe having a cast body, a longitudinal reinforcement in said body and a series of approximately vertical inserts wedge-locked transversely in said body.

3. A brake-shoe having a cast body, a longitudinal reinforcement in said body and a series of transverse inserts in said body having trapeziform faces.

4. A brake-shoe having a cast body and a series of vertical inserts wedge-locked transversely in said body and having their lower edges exposed and forming a portion of the braking-face of the shoe.

5. A brake-shoe having a cast body and a fairly-thin vertical insert wedge-locked transversely in said body.

6. A brake-shoe having a cast body and an insert wedge-locked in approximately vertical and transverse position in said body, said insert having two trapeziform faces and a lower edge which forms a portion of the braking-face of the shoe.

7. A brake-shoe having a cast body and an insert in said body having one of its surfaces in the form of a trapezium.

8. A brake-shoe having a cast body and a fairly-thin transverse insert in said body having all of its edges out of parallelism.

9. An insert for a brake-shoe having all of its edges out of parallelism.

10. A brake-shoe having a cast body and a short approximately vertical insert wedge-locked transversely in said body.

11. A brake-shoe having a cast body and a series of separated inserts wedge-locked transversely in said body.

12. An insert for a brake-shoe of a wedge-shape configuration with all of its edges out of parallelism.

13. An insert for a brake-shoe having one of its surfaces in the form of a trapezium.

14. An insert for a brake-shoe having two opposite trapeziform faces.

15. An insert for a brake-shoe having two opposite trapeziform faces and all of its edges out of parallelism.

16. A brake-shoe comprising a body, a longitudinal reinforcement in said body and a series of transverse inserts in said body below and in contact with the reinforcement.

17. A brake-shoe having a cast body, two horizontal longitudinal reinforcements arranged side by side in said body and a series of transverse inserts wedge-locked transversely in said body with their top surfaces in contact with the longitudinal reinforcements.

18. A brake-shoe having a cast body, two horizontal longitudinal reinforcements arranged side by side in said body and each having a series of perforations in which portions of the cast body lock, and a series of approximately vertical inserts wedge-locked transversely in said body below the longitudinal reinforcements.

19. A brake-shoe having a cast body at least one horizontal longitudinal reinforcement in said cast body, and a series of vertical inserts wedge-locked transversely in said body and having their lower edges exposed and forming a portion of the braking-face of the shoe and their upper edges in contact with the longitudinal reinforcement.

20. A brake-shoe having a cast body two longitudinal reinforcements embedded horizontally side by side in said body and curved in correspondence with the curve of the brake-shoe, and a series of fairly-thin vertical inserts located at regular intervals in said body below the longitudinal reinforcements and wedge-locked transversely in said body.

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