

No. 821,000.

PATENTED MAY 22, 1906.

W. P. TAYLOR.  
BRAKE SHOE.

APPLICATION FILED MAR. 13, 1905.

Fig. 5. Fig. 6.

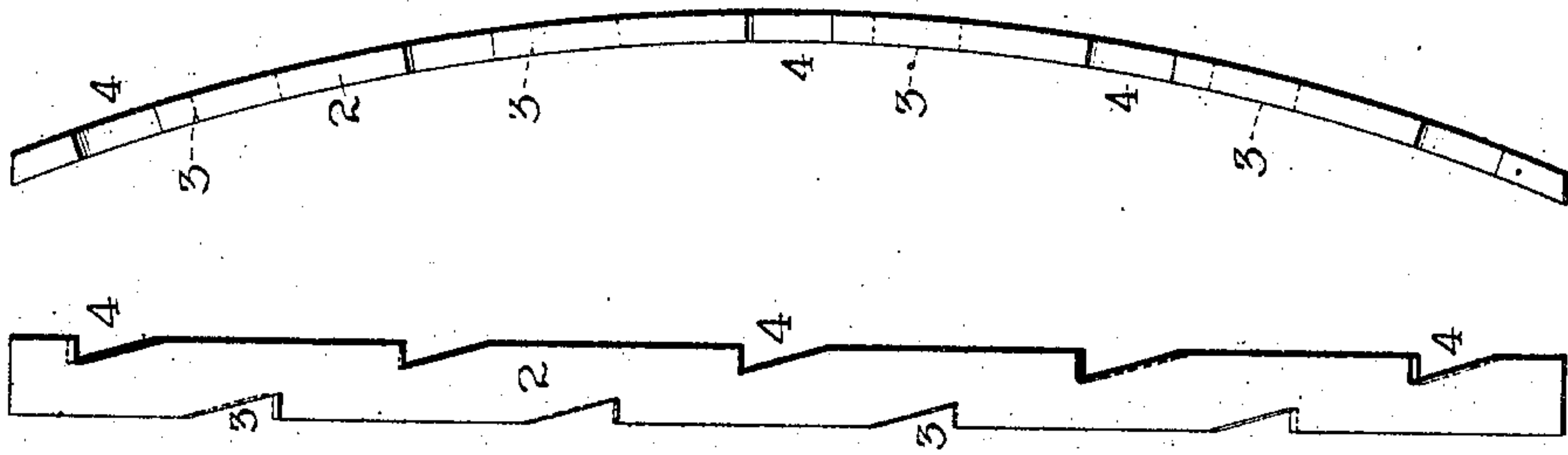


Fig. 3.

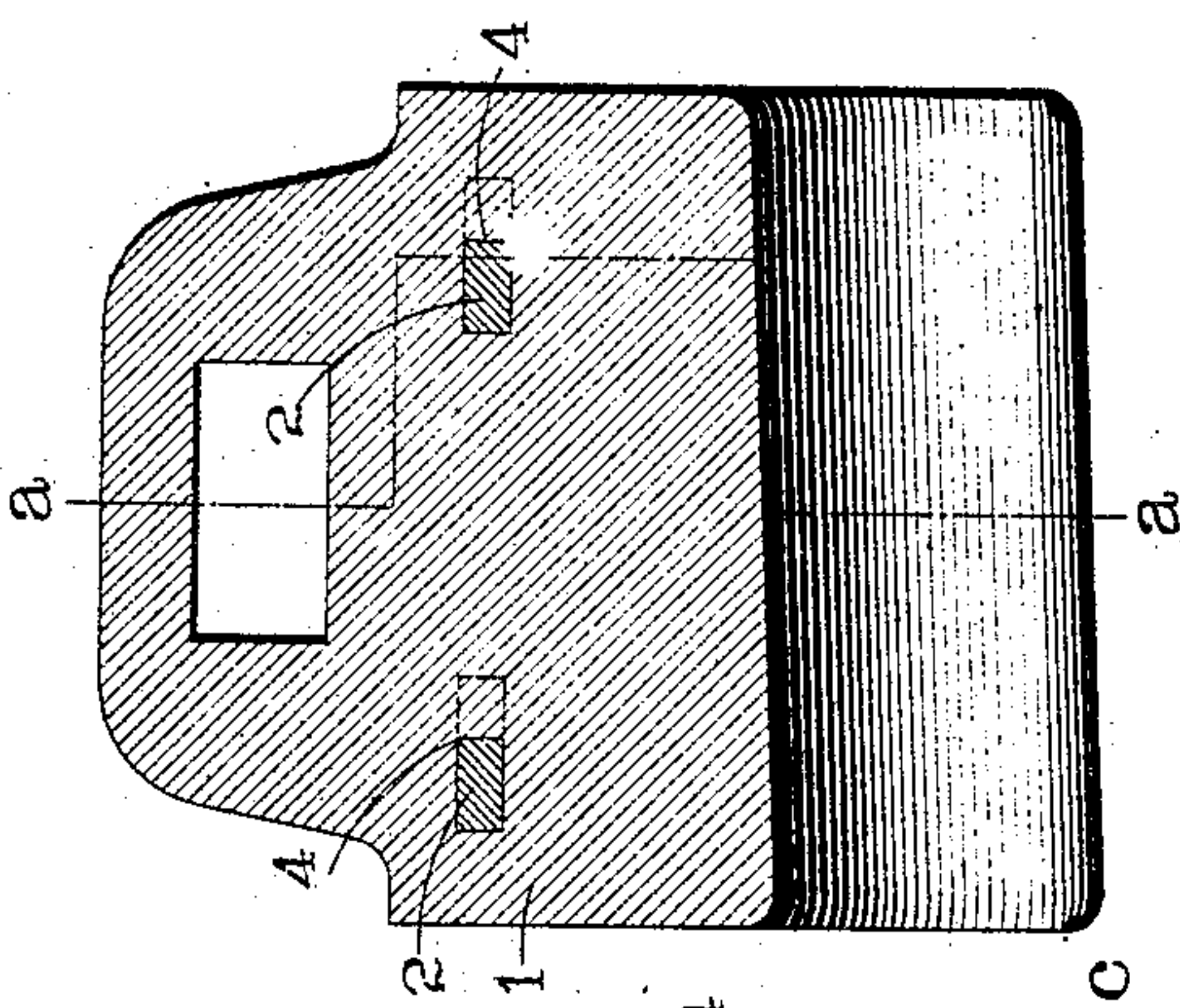


Fig. 4.

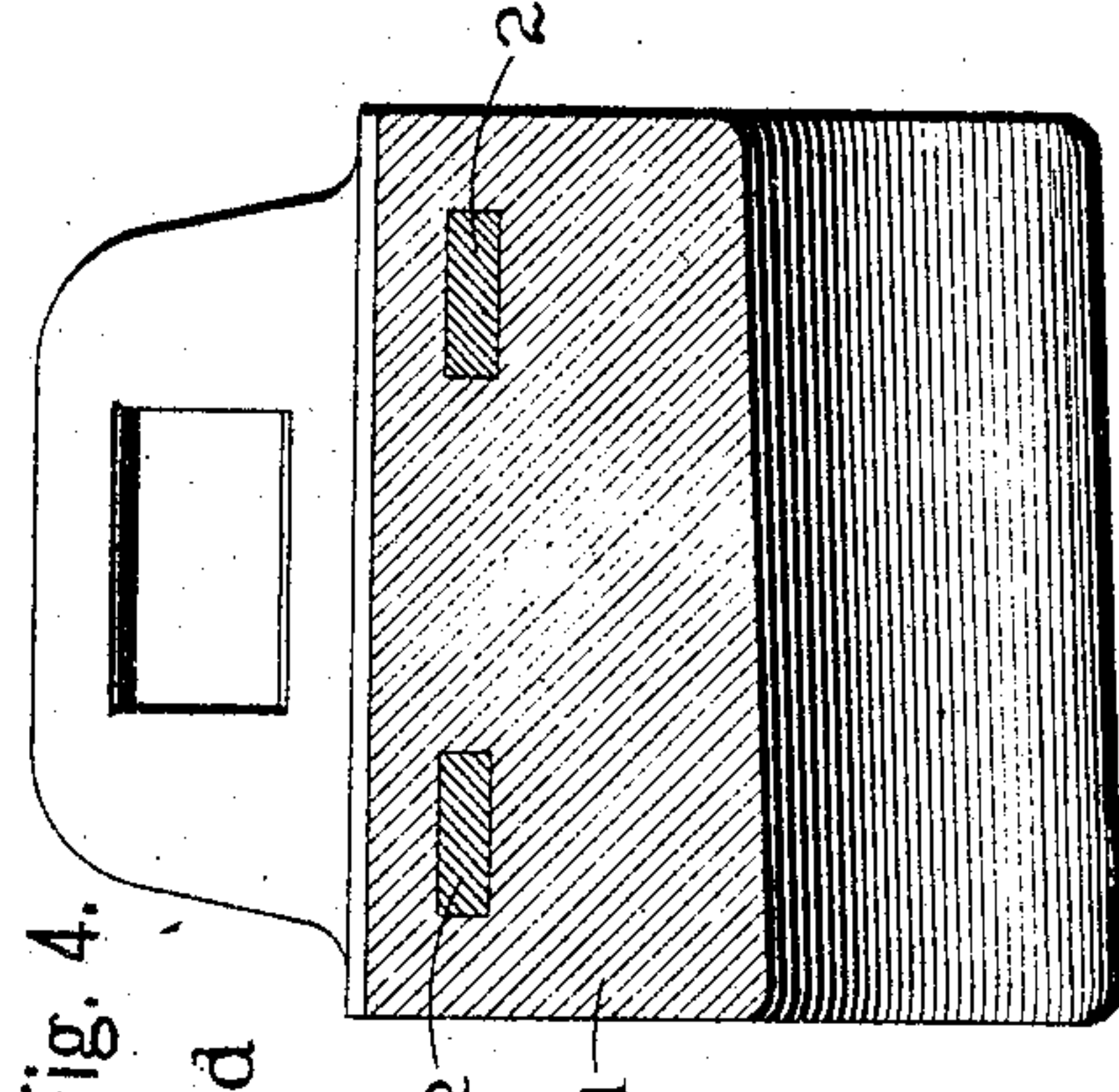


Fig. 2.

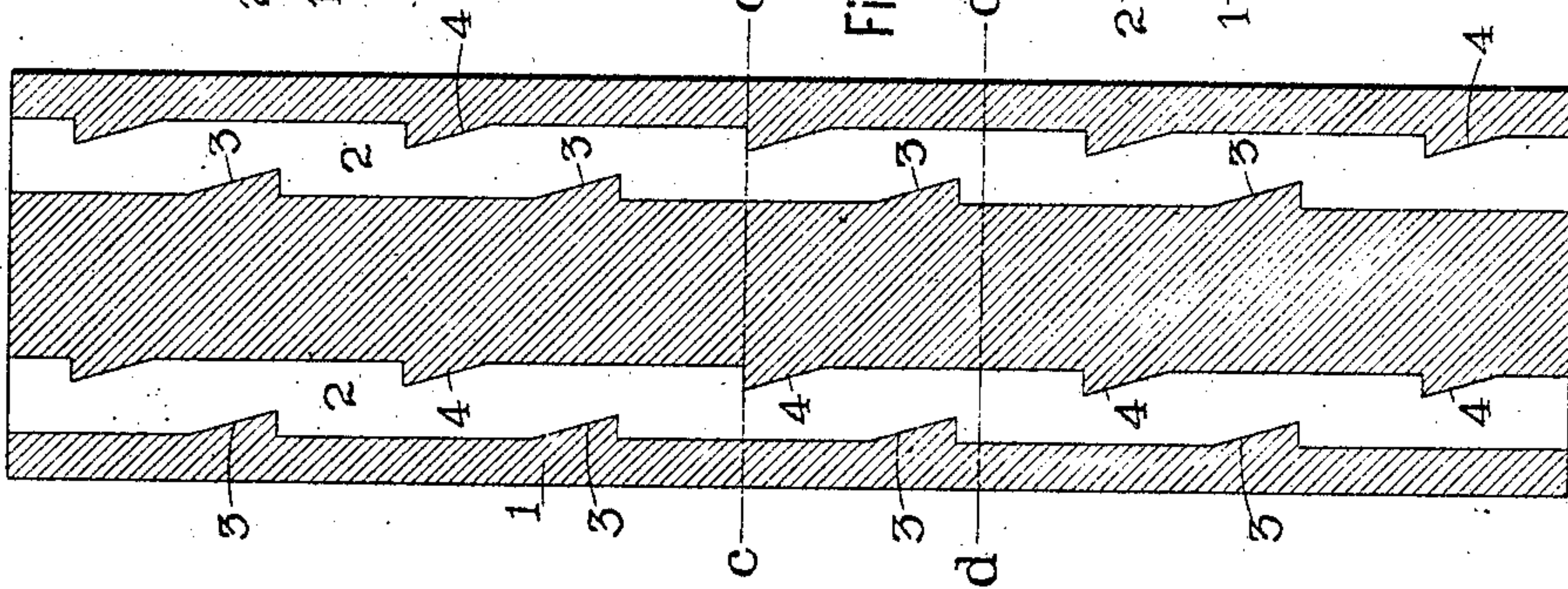
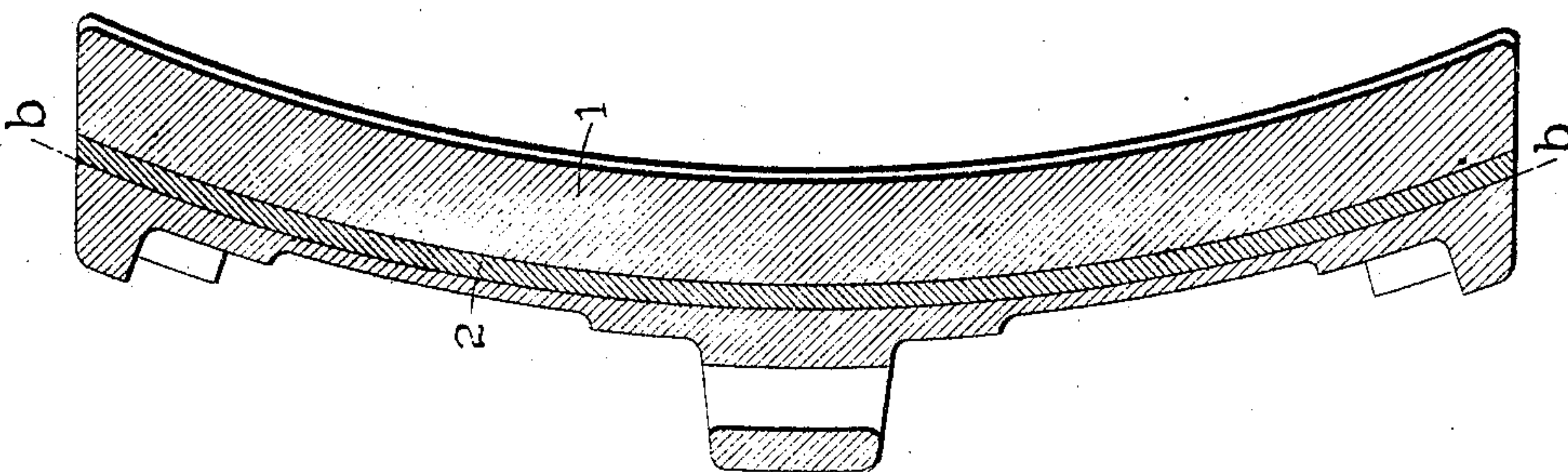


Fig. 1.



Witnesses.  
*L. M. Langster*  
*Geo. A. Neubauer*

*William Perry Taylor* Inventor.  
By *A. J. Langster* Attorney.



# UNITED STATES PATENT OFFICE.

WILLIAM PERRY TAYLOR, OF BUFFALO, NEW YORK.

## BRAKE-SHOE.

No. 821,000.

Specification of Letters Patent.

Patented May 22, 1906.

Application filed March 13, 1905. Serial No. 249,712.

*To all whom it may concern:*

Be it known that I, WILLIAM PERRY TAYLOR, a citizen of the United States, residing in 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 reinforced railway brake-shoe; and it consists of a cast body and one or more plate-like reinforcements which are secured in the body during the casting thereof and in such manner that the contacting surfaces of the body and reinforcement are fused or coalesced together.

The object of the invention is to produce a state of coalescence of appreciable thickness between the cast body and a reinforcement, and thereby secure the reinforcement at all points of contact firmly and rigidly to the body.

This 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 a preferred adaptation of the invention is illustrated.

Figure 1 is a vertical longitudinal section through the improved brake-shoe on line *a a*, Fig. 3. Fig. 2 is a longitudinal section through the improved brake-shoe cut on the curved line *b b*, Fig. 1, concentric with the curved braking-surface of the shoe. Fig. 3 is an enlarged transverse section through the improved brake-shoe on line *c c*, Fig. 2. Fig. 4 is an enlarged transverse section on line *d d*, Fig. 2. Fig. 5 is a face view of one of the reinforcements. Fig. 6 is an edge view of one of the reinforcements.

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

The preferred type of this improved brake-shoe consists of a cast body and one or more plate-like reinforcements which are secured in said body during the casting thereof and in a heated condition in such manner that the reinforcement and body are perfectly united by a formation of an appreciable thickness which is produced by coalescence between the contacting-surfaces of body and reinforcement during the process of casting. This is accomplished by placing one or more reinforcements in position in a mold after it has been heated and pouring around it the

molten metal which is to form the body of the shoe.

The heating of the reinforcement prevents the chilling of the molten metal as it contacts therewith, so that the molten metal in the immediate vicinity of the heated reinforcement by its own heat increases the heat of the surface of the reinforcement sufficiently to partially melt it and then in cooling produces a state of coalescence between the contacting surfaces of the reinforcement and body. The reinforcement is heated only sufficiently to dry it perfectly and prevent chilling, for it has been found by experience that to heat the reinforcement nearly to a melting-point will produce a complete amalgamation between the cast body and reinforcement and practically destroy the reinforcing strength. The aim of this part of the invention is to provide for coalescence between the opposed surfaces of the reinforcement and body for an appreciable extent without completely freeing the reinforcement within the body, and thereby obliterating the reinforcement and destroying its strength. By this process the reinforcement and body are united by a coalesced formation of appreciable extent and still retain their individual characteristics. The preferred adaptation of this improved brake-shoe comprises a cast body 1 of the usual shape and two reinforcements 2. These reinforcements are similar in contour and of fairly narrow thin flat-surfaced strips of sheet or wrought metal curved to the curve of the shoe-body and provided in opposite side edges with a series of notches 3 and 4. The notches are cut in the side edges of the reinforcement and each have one wall extending transversely and another wall extending diagonally out from the inner termination of the transverse wall, so that a substantially triangular section of metal is cut away to form each notch.

It will be noted that the notches 3 on one edge are in a direction opposite to the notches 4 on the other edge. The purpose of these notches is not only to provide depressions or recesses in the edges of the reinforcements in which the cast metal of the body will interlock, but also to afford means whereby the plates are retained and supported in place during the cooling of the shoe after casting the body. The surface of the plate reinforcement is even and flat, with the exception that it is curved to correspond with the



curve of the shoe, and in conformation it is fairly thin, narrow in width, and about equal in length to the shoe itself, so that it will extend therethrough from end to end. The great  
 5 advantage of this improvement is that the plate-like reinforcement is completely united throughout to the body by a coalesced formation of an appreciable thickness, which consists in part of cast metal and in part of the  
 10 metal of the reinforcement.

I claim as my invention—

1. A brake-shoe comprising a cast body and a plate-like reinforcement in said body which is united thereto by a coalesced formation of appreciable extent consisting of fused-  
 15 together portions of the cast metal of the body and the metal of the reinforcement, the remaining parts of the reinforcement and body retaining their independent characteristics.  
 20

2. A brake-shoe comprising a cast body and a plurality of parallel fairly thin flat-surfaced reinforcing-plates embedded in said body and having notched edges.

25 3. A brake-shoe comprising a cast body and a fairly thin flat-surfaced reinforcing-plate having at least one recess in its side edge, one wall of which extends transversely

and another wall of which extends diagonally.

4. A brake-shoe comprising a cast body and a plurality of parallel flat-surfaced reinforcing-plates of fairly narrow width embedded in said body and having portions cut therefrom.

5. A brake-shoe comprising a cast body and a flat-surfaced reinforcing-plate of approximately equal width throughout embedded in said body and having both of its side edges notched.

6. A brake-shoe comprising a cast body and a plurality of parallel fairly thin flat-surfaced reinforcing-plates embedded in said body and having portions cut therefrom.

7. A brake-shoe comprising a cast body and a plurality of reinforcing-plates of fairly narrow width embedded in said body and united thereto by coalesced formation.

8. A brake-shoe comprising a cast body and a reinforcing-plate embedded in said body and united thereto by a coalesced formation.

WILLIAM PERRY TAYLOR.

Witnesses:

L. M. SANGSTER,  
 GEO. A. NEUBAUER.