

No. 734,567.

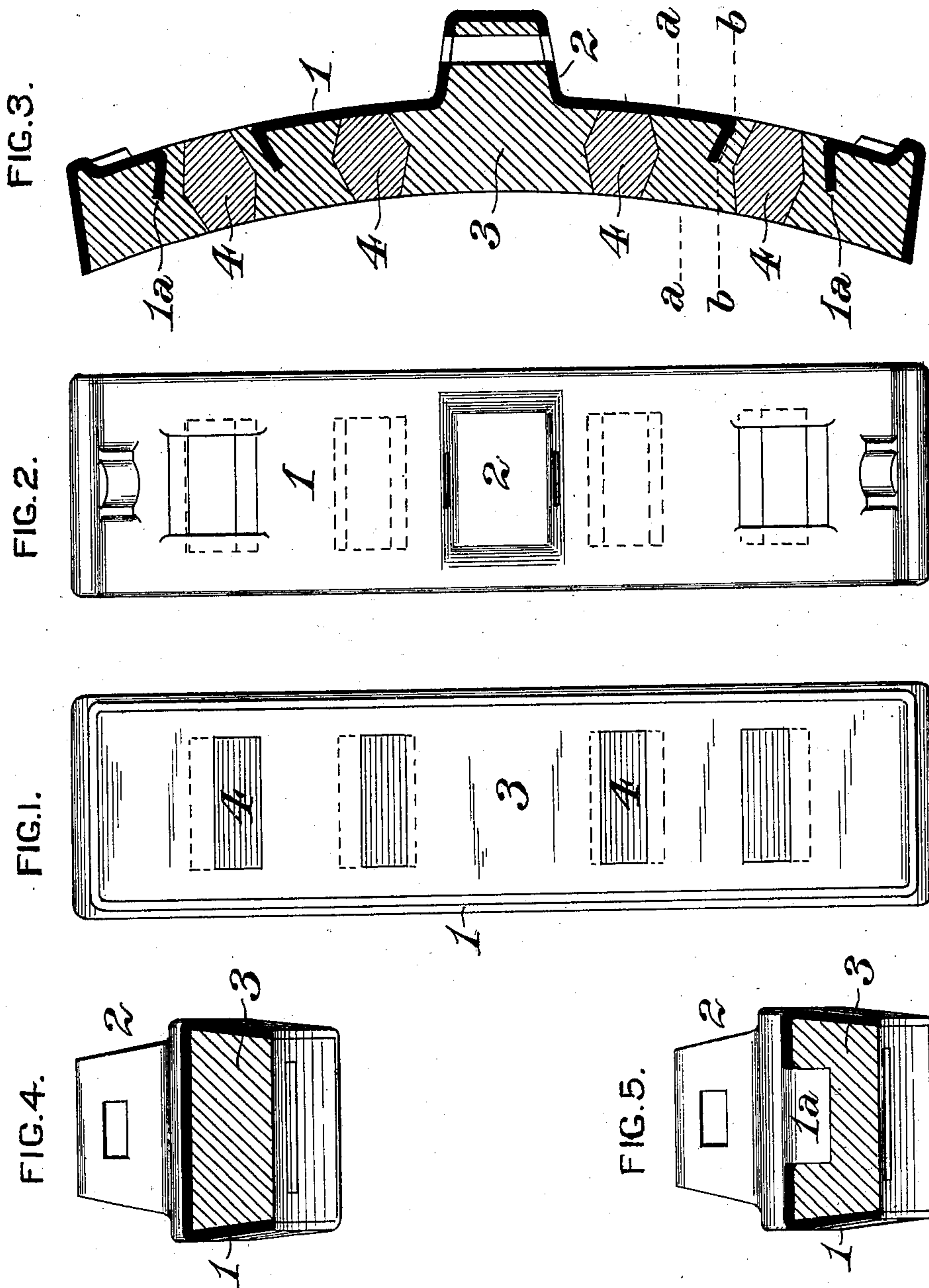
PATENTED JULY 28, 1903.

J. J. KINZER.
BRAKE SHOE.

APPLICATION FILED FEB. 27, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

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S. R. Bell.

INVENTOR

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2 SHEETS—SHEET 2.

FIG. 8.

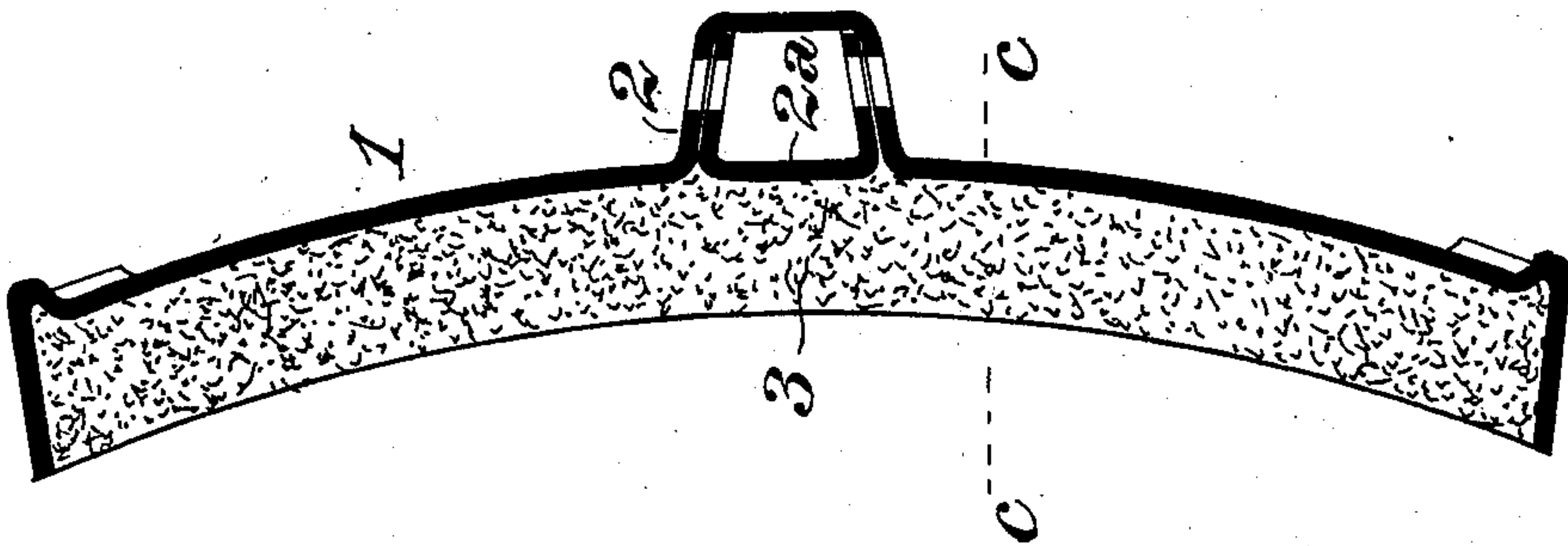


FIG. 7.

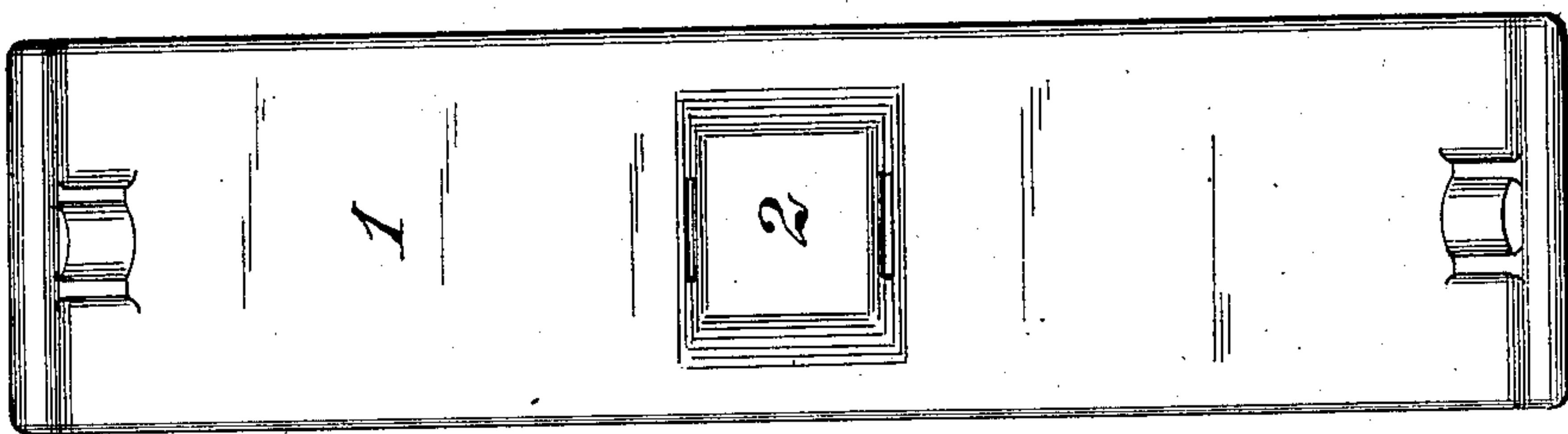


FIG. 6.

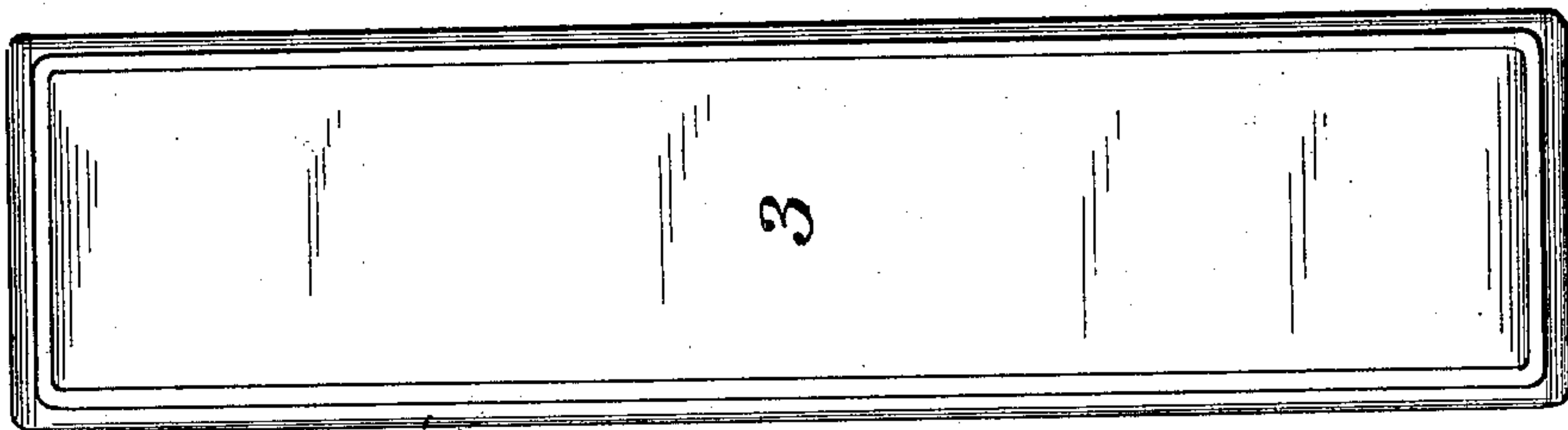
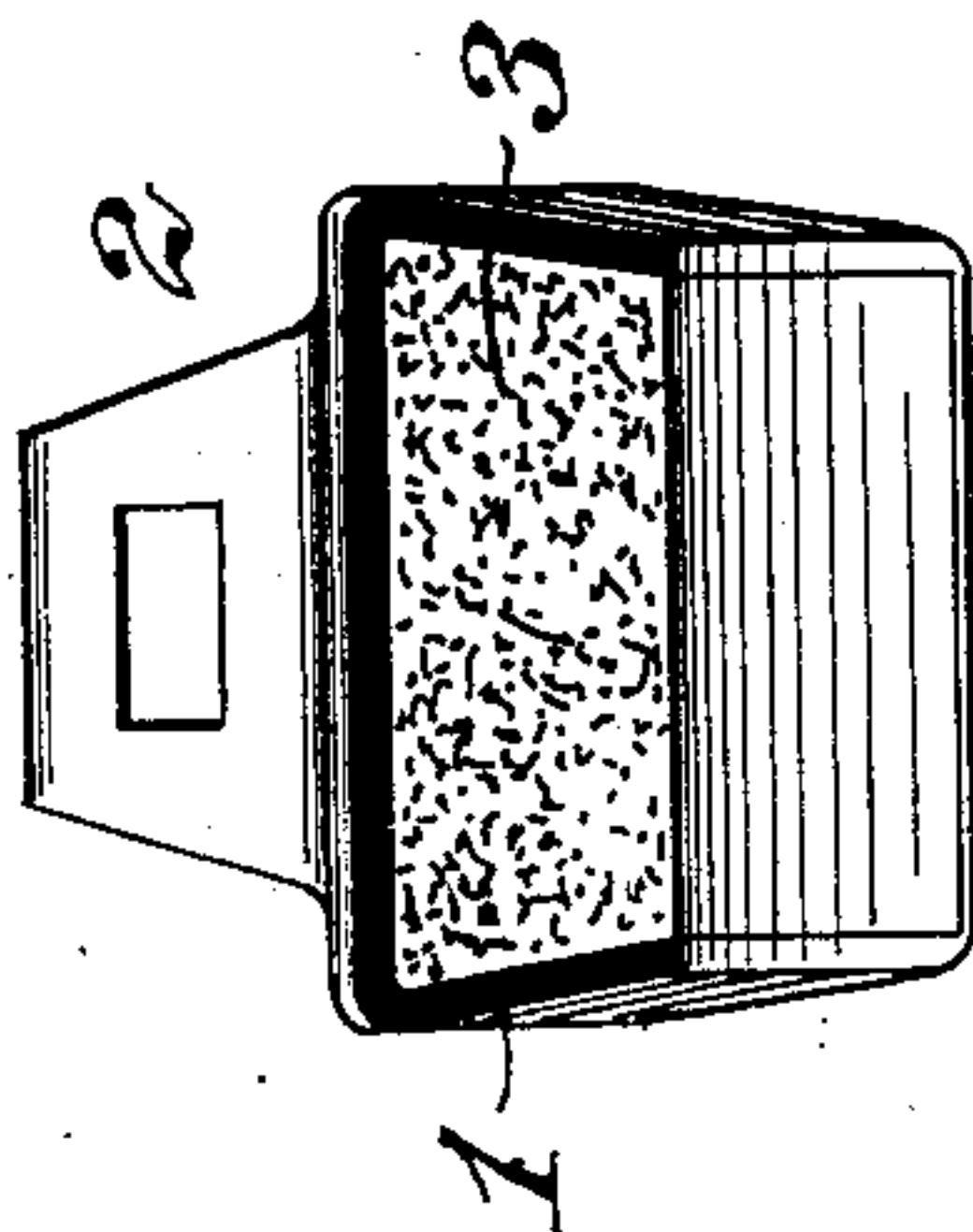


FIG. 9.



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UNITED STATES PATENT OFFICE.

JOHN J. KINZER, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO PITTSBURGH BRAKE SHOE COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

BRAKE-SHOE.

SPECIFICATION forming part of Letters Patent No. 734,567, dated July 28, 1903.

Application filed February 27, 1903. Serial No. 145,324. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. KINZER, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a certain new and useful Improvement in Brake-Shoes, of which improvement the following is a specification.

The object of my invention is to enable a substantial increase in the life or period of service of brake-shoes to be attained by the provision of a construction which may be maintained in operative condition without liability to breakage until substantially completely worn out instead of requiring to be removed from service when worn down to about one-half of its original thickness, or thereabout, as is ordinarily the case.

To this end my invention, generally stated, consists in the combination of a supporting member consisting of an integral inclosing casing of strong and ductile material and a frictional member consisting of a filling of material which is suited to exert friction upon the periphery of a car-wheel and is secured within the supporting member.

The improvement claimed is hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a front or face view of a brake-shoe, illustrating an embodiment of my invention; Fig. 2, a back view of the same; Fig. 3, a longitudinal central section; Figs. 4 and 5, transverse sections on the lines *a a* and *b b*, respectively, of Fig. 3; Fig. 6, a front view of a brake-shoe, illustrating a modification; Fig. 7, a back view of the same; Fig. 8, a longitudinal central section, and Fig. 9 a transverse section on the line *c c* of Fig. 8.

In the practice of my invention I provide a supporting member consisting of a casing 1, which is curved in substantial accordance with the periphery of the car-wheel to which the shoe is to be applied and which has its back, side, and end walls formed in an integral structure. The casing is made of material possessing sufficient strength and ductility to enable it to be comparatively light in weight, to sustain the strains to which it is subjected in service, and to be capable, if desired, of being bent into proper form, as

malleable iron, wrought-iron, or steel, and is provided with a lug 2 on its back through which it may be connected to a brake head or hanger. As shown in the drawings and as is desirable in practice, it is formed of a plate or sheet of steel which is bent or pressed in suitably-formed dies to present connected back, side, and end walls, with a lug 2 integral with its back wall. A separately-formed lug may, however, be connected to the back wall, if preferred. The side walls of the casing are preferably inwardly inclined from the back wall in order to effectually retain the filling of the shoe in position.

The rubbing or frictional action of the brake-shoe upon the wheel is exerted by a frictional member 3, consisting of a filling of any suitable material, as cast-iron or a composition of matter specially prepared for the purpose, instances of which are familiar to those skilled in the art, said filling being either cast into the casing 1 or inserted therein by pressure and retained in position by the walls of the casing. Inserts 4, of harder material, as steel or wrought-iron, may also be fixed in the filling, if desired.

As indicated in Figs. 1 to 5, the filling 3 is a body of cast-iron, which is poured into the casing 1 while set in a mold, the back wall of the casing being preferably provided with inward turned lips 1^a, formed by inwardly bending the metal thereof at the upper and lower edges of openings near its ends, said lips serving to anchor and firmly hold the filling. Inserts 4, of steel or wrought-iron, are also shown as set in the casing and retained therein by the solidification of the cast-iron filling around them.

Figs. 6 to 9, inclusive, illustrate a brake-shoe in which are combined an integral casing 1, as above described, and a filling 3, which is any suitable and preferred composition of matter of such character as to exert proper and sufficient friction upon the periphery of a wheel without the imposition of undue or excessive pressure thereon. The composition filling is pressed into the casing while in a plastic condition and after hardening is held firmly therein. In order to prevent it from entering the lug 2, a liner 2^a may be

inserted therein before the composition is supplied to the casing.

A brake-shoe of the construction above described presents the substantial advantage of being capable of use until practically entirely worn away without liability to breakage as it becomes thin. In the use of brake-shoes of the constructions heretofore employed the tendency to crack and break when worn to the extent of about one-half, and the consequent liability to derailment or injury to persons by flying fragments, renders it necessary as a measure of precaution to remove and scrap them when so worn. The waste of material and loss of time involved in so doing are avoided by the employment of brake-shoes embodying my invention.

My present invention is specially adapted for application in connection with a separate and independent back fitting the back wall of the casing, by which the casing is strengthened and which is interposed between the casing and brake head or hanger, so as to protect the latter from wear and enable the back wall of the casing to be worn completely off. Said independent back is set forth in a separate application filed by me of even date herewith, Serial No. 145,323.

I claim as my invention and desire to secure by Letters Patent—

1. In a brake-shoe, the combination of a supporting member consisting of an integral

inclosing casing of strong and ductile material, and a frictional member consisting of a filling of material which is suited to exert friction upon the periphery of a car-wheel and is secured within the supporting member.

2. In a brake-shoe, the combination of an integral inclosing casing of strong and ductile material, and a filling of frictional material secured in, and fitting integrally against the walls of said inclosing casing.

3. In a brake-shoe, the combination of an integral inclosing casing of strong and ductile material, a filling of frictional material secured in, and fitting integrally against the walls of, said inclosing casing, and an insert fixed in said filling.

4. In a brake-shoe, the combination of an inclosing casing of strong and ductile material having integral back, side, and end walls, and a filling of frictional material which is solidified in said casing and thereby integrally connected therewith.

5. In a brake-shoe, the combination of an inclosing casing of sheet metal bent into integral back, side, and end walls, and a filling of frictional material solidified in and thereby integrally connected with said inclosing casing.

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Witnesses:

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