

(No Model.)

J. T. HALL.  
BRAKE SHOE.

No. 511,298.

Patented Dec. 19, 1893.

Fig. 1.

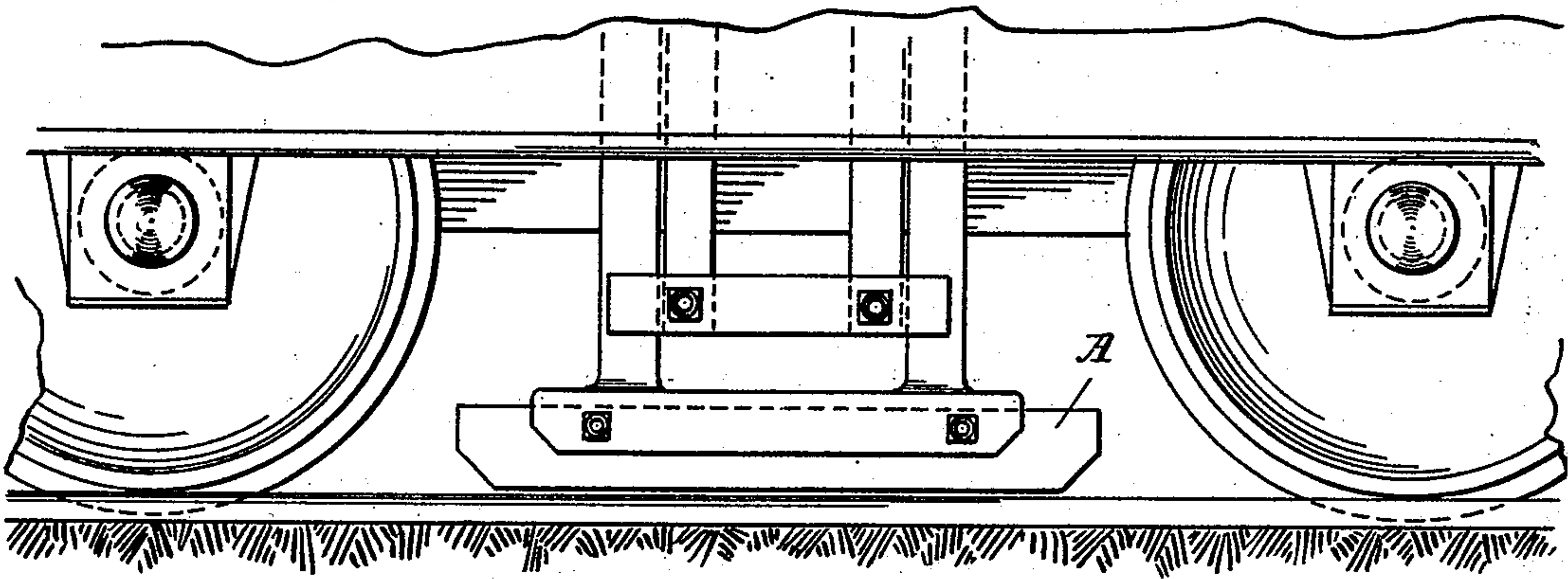


Fig. 2.

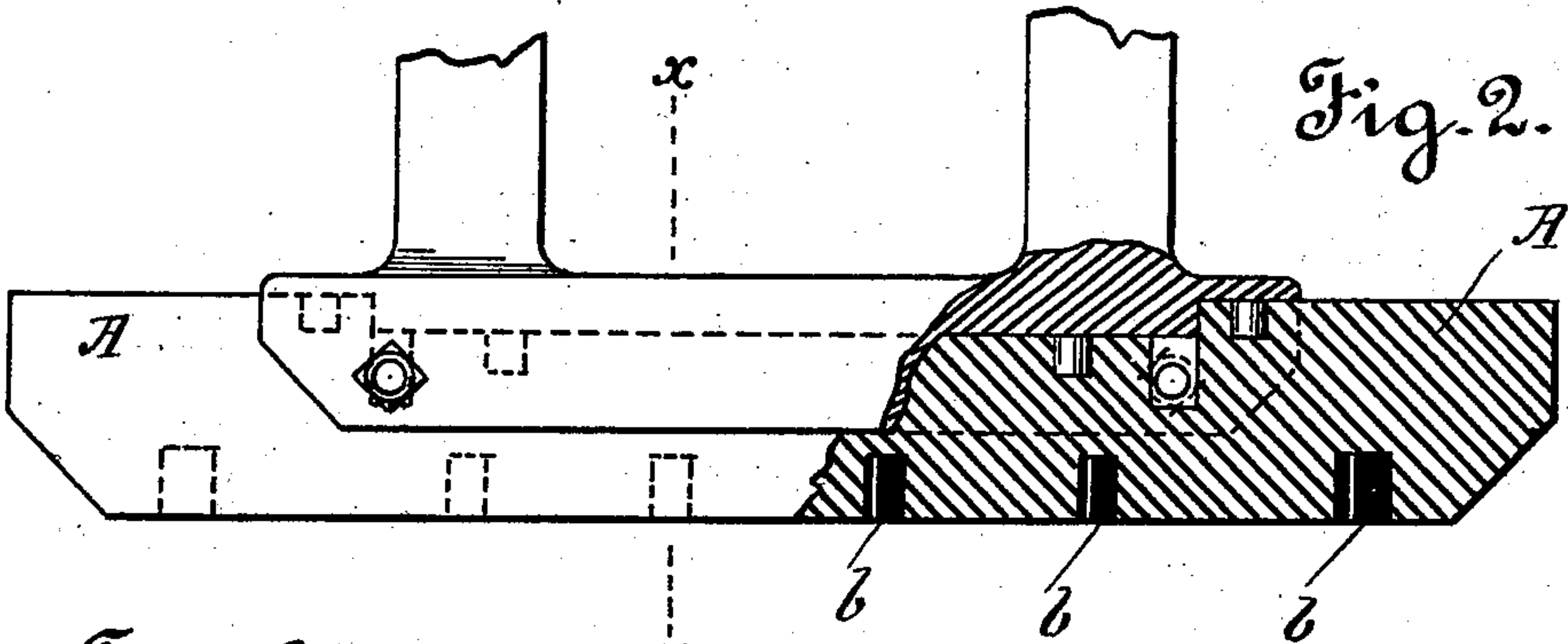


Fig. 3.

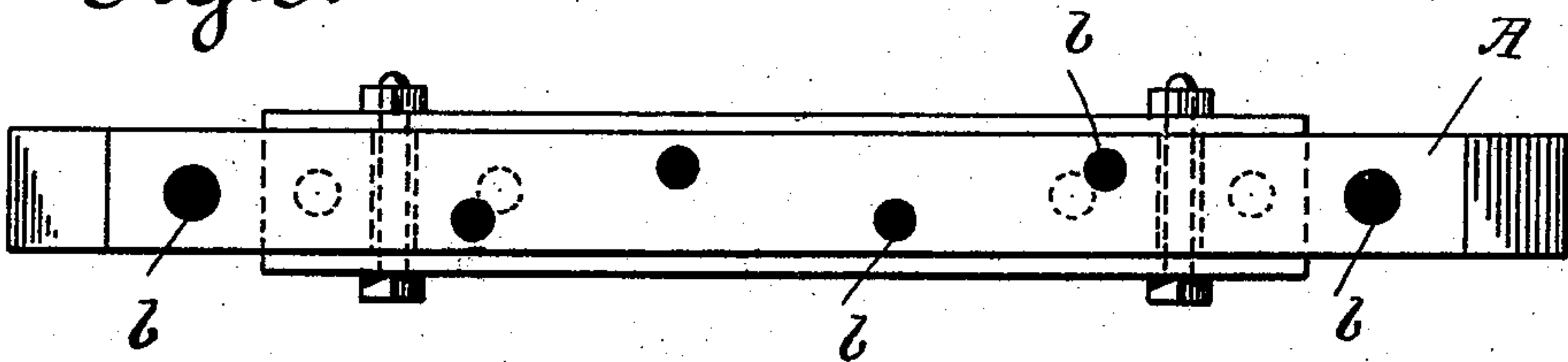
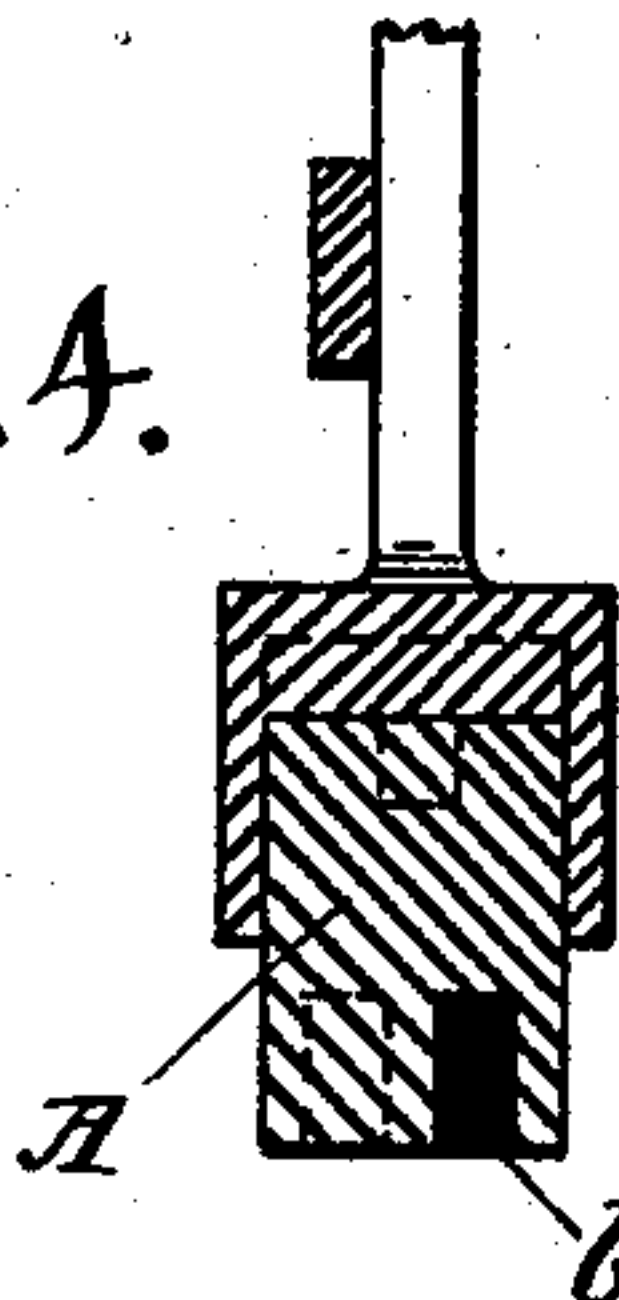


Fig. 4.



Witnesses.

*H. H. Montevideo,*  
*Leed Craig*

Inventor.

*James T. Hall*



# UNITED STATES PATENT OFFICE.

JAMES T. HALL, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF ONE-HALF  
TO LEE D. CRAIG, OF SAME PLACE.

## BRAKE-SHOE.

SPECIFICATION forming part of Letters Patent No. 511,298, dated December 19, 1893.

Application filed August 2, 1893. Serial No. 482,200. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES THOMAS HALL, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented certain new and useful Improvements in Brake-Blocks; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

My invention relates to the wooden block or face piece of a brake which comes in contact with the surface against which the brake is applied, and although my improvement can be used on all kinds and classes of brakes it is especially adapted for car lines where the brake is applied against the upper face of the track or rail.

My invention consists first, in applying the wood which constitutes the shoe of the brake with its grain, at right angles to the surface against which it is applied, so that the end of the grain will form the friction surface; secondly, in making holes or grooves in or across the face of the shoe or block; and thirdly, in filling a peculiar composition into the holes or grooves, all as hereinafter more fully described.

Referring to the accompanying drawings, Figure 1 is a side elevation of the lower part of street car, showing track shoe in position. Fig. 2 is a detail front elevation of improved shoe partly broken. Fig. 3 is a detail of same, bottom plan. Fig. 4 is a detail of same, sectional end elevation through  $x x$  on Fig. 2.

A represents a wooden brake block or shoe, such as is used for applying friction to the rail of a railway track for arresting or stopping the speed of a car or train.

My invention contemplates the application to the surface of this shoe or brake of adhesive substance that will cause the shoe or brake to adhere to or bite upon the rail with greater friction than can be obtained from the ordinary surface of the shoe or brake. This can be done in several ways, but I prefer to bore holes  $b. b. b.$  in the face of the

shoe or brake to the required depth and to fill the holes with a frictional substance or composition that will either melt at a low temperature or be worn off and rubbed into the face of the shoe or brake by the friction due to the application of the shoe or brake to the rail or other opposing surface.

The frictional compound which I use consists of resin fifteen (15) per cent. and pitch five (5) per cent., mixed with eighty (80) per cent. of sharp quartz sand. These ingredients I mix together under heat, and while it is hot I pour it into the holes or grooves in the face of the brake shoe or block, so that when it cools it forms a part of the face of the shoe.

Instead of holes dovetail grooves might be provided at intervals across the face of the shoe or brake, into which the substance or composition is poured and molded.

A shoe or brake thus constructed will yield a maximum amount of friction. The friction and wear due to the application of the shoe or brake against the opposing surface will cause this adhesive substance or compound to be worn off as fast as the surface of the brake or shoe is worn and the sharp grains of sand to be rubbed and embedded into the frictional surface between the soft and hard grain of the wood, so as to be incorporated with it, thus preparing the entire surface of the shoe or brake and keeping it in a condition to create the greatest amount of friction.

The shoe might be prepared by immersion or saturation before use, so as to thoroughly impregnate it with the adhesive or frictional substance, but I prefer the method above described.

Brake blocks and shoes thus prepared are especially adapted for cable and electric cars where the cars often require to be stopped quickly, and they will be particularly useful on steep grades, because they will act upon the surface of a rail, even if it is damp or wet.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A brake block or shoe having holes or grooves in its face filled with a compound of

resin, pitch and sharp sand, substantially as described.

2. A brake block or shoe having its grain at right angles to the braking surface and  
5 having holes or grooves in its face filled with a compound of resin, pitch and sharp sand, substantially as described.

\*3. A frictional composition for brake shoes, consisting of resin, pitch and sharp sand, in about the proportion specified.

JAMES T. HALL.

Witnesses:

CHAS. J. ARMBRUSTER,  
A. S. PARÉ.