

No. 886,694.

PATENTED MAY 5, 1908.

I. A. GIBBS.  
BRAKE SHOE.

APPLICATION FILED SEPT. 17, 1907.

Fig. 1.

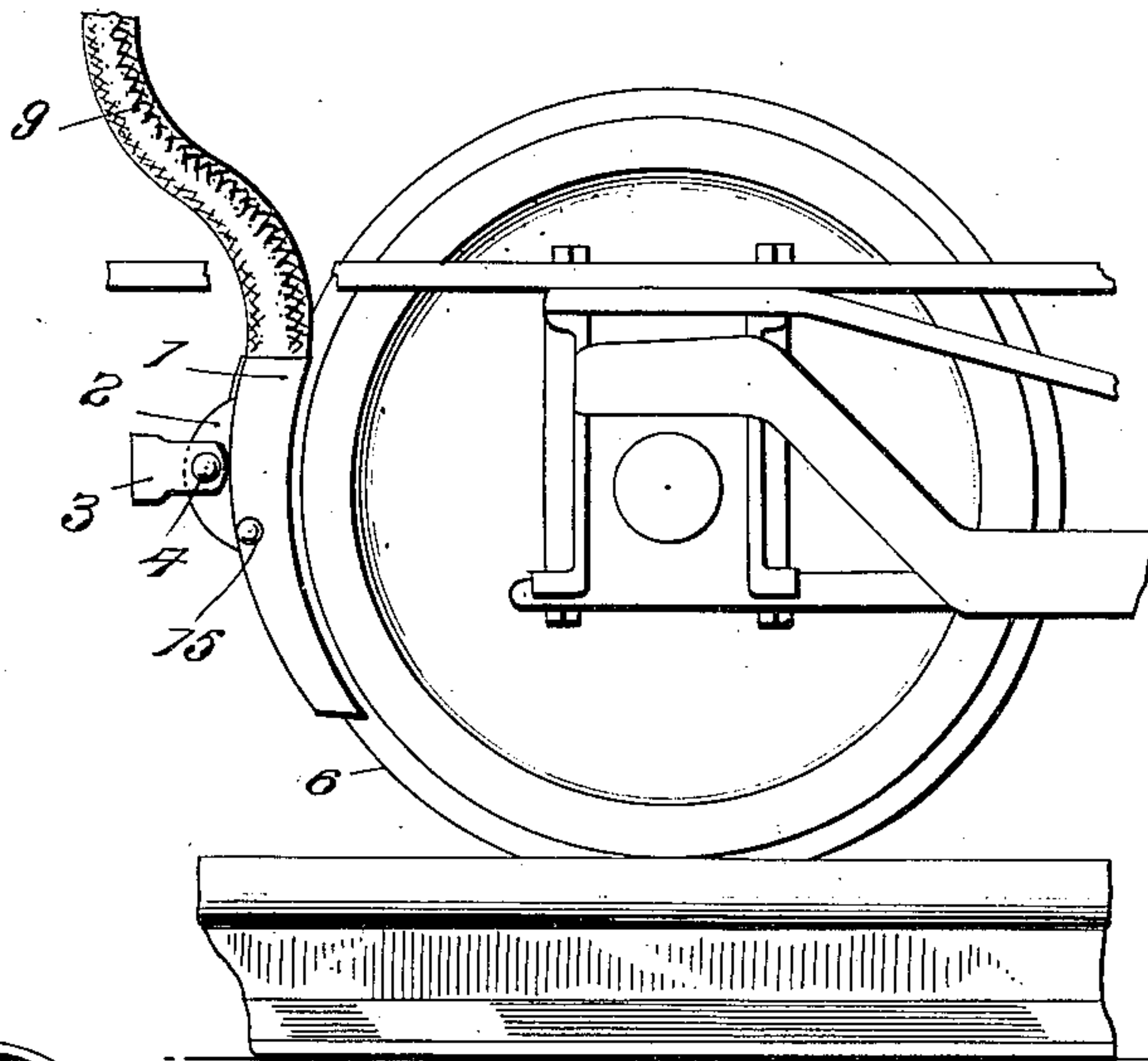


Fig. 2.

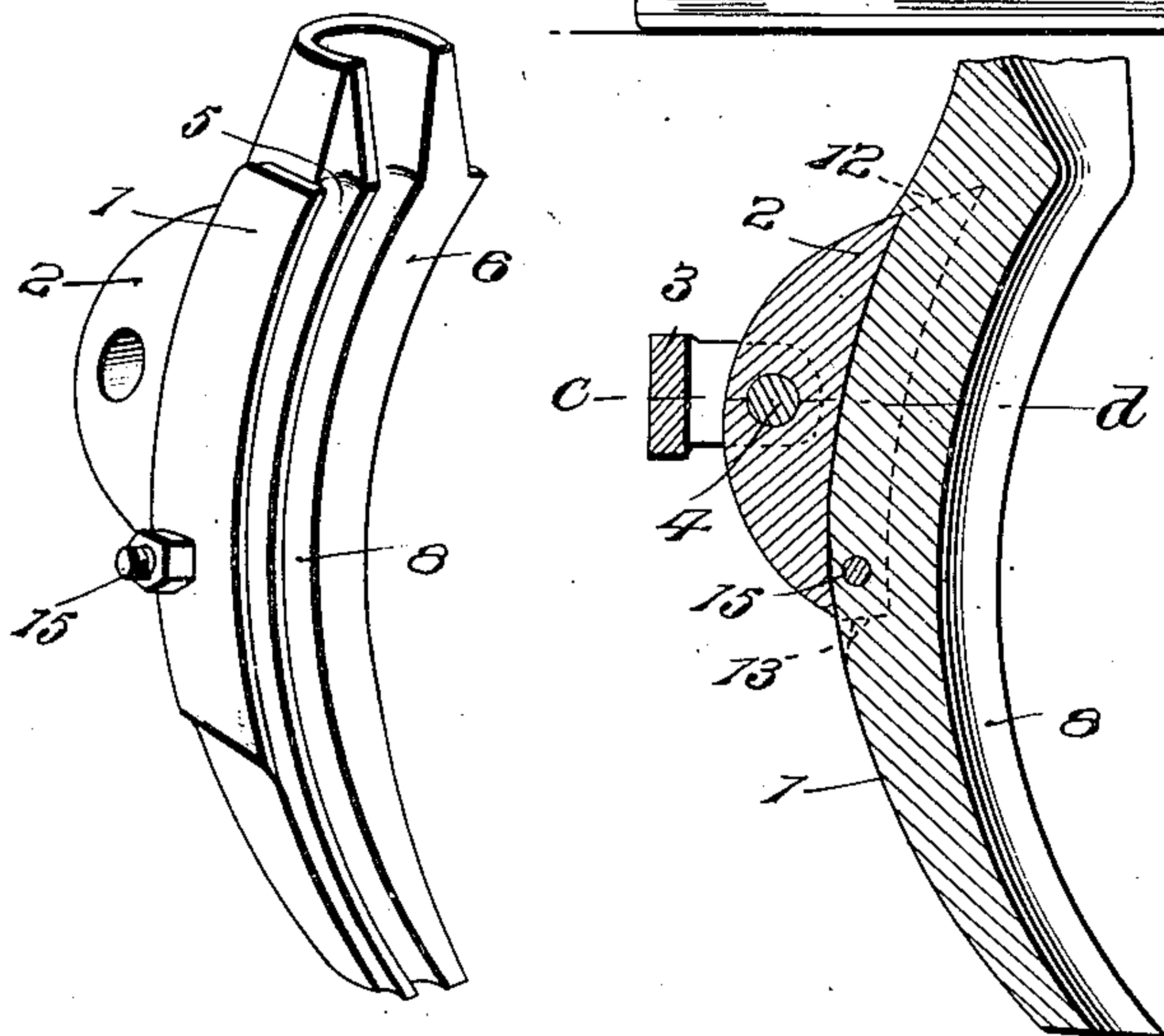
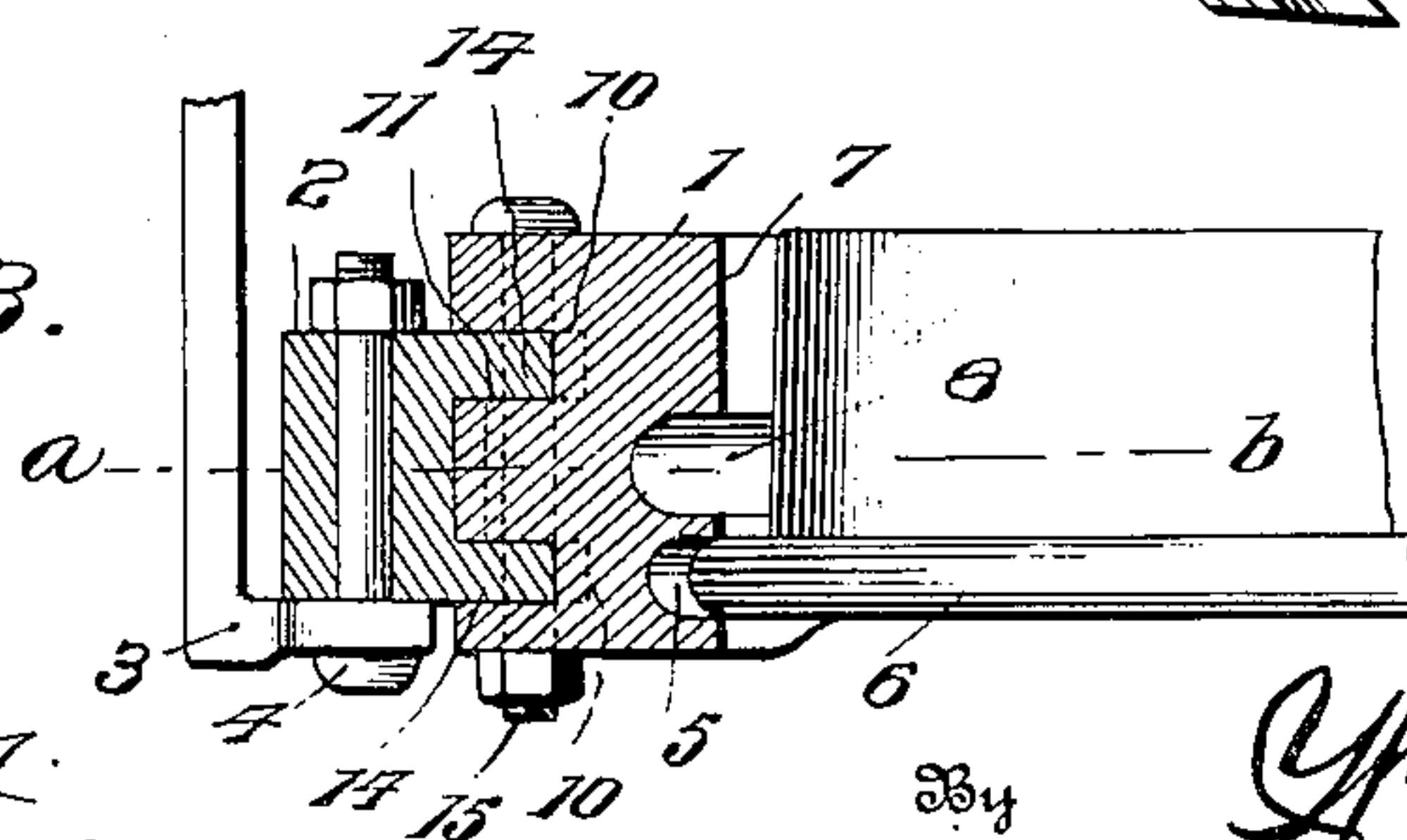


Fig. 4.

Fig. 3.



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# UNITED STATES PATENT OFFICE.

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## BRAKE-SHOE.

No. 886,694.

Specification of Letters Patent.

Patented May 5, 1908.

Application filed September 17, 1907. Serial No. 393,273.

*To all whom it may concern:*

Be it known that I, ISAAC A. GIBBS, a citizen of the United States, residing at Roanoke, in the county of Roanoke and State of Virginia, have invented certain new and useful Improvements in Brake-Shoes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in railroad brake-shoes and the means for attaching the same to the brake beam.

My invention has for its object to utilize the brake-shoe as a conduit for delivering sand from the sand box to the track directly in front of the truck wheels in order to secure the greatest efficiency of a minimum quantity of sand.

My invention has also for its object to so construct the shoe and thrust-block that the former may be readily removed for repair or substitution.

It is well understood by those familiar with railroad traffic that in the use of the ordinary sanding mechanism where the sand is delivered through a sand tube in advance of the brake-shoe that a large percentage of the sand is frequently dissipated or blown from the track by wind or air currents.

My invention is designed to overcome this difficulty and to deliver the sand directly at the locality where it will be most efficient so that with a minimum quantity of sand the desired results may be obtained.

My invention consists in the details of construction and arrangement hereinafter more fully set forth.

In order that those skilled in the art to which my invention appertains may fully understand the same I will proceed to describe details of construction referring by numerals to the accompanying drawing in which

Figure 1 is a detail side elevation of the forward wheel of a truck upon a rail and with my improved brake-shoe and connection leading to the sand box, the latter not shown.

Fig. 2 is a perspective view showing brake surfaces of the shoe and the sand channel therein. Fig. 3 is a central vertical section taken on the line *a—b* of Fig. 4, and Fig. 4 is a horizontal section taken on the line *c—d* of

Fig. 3 and showing the relation between the brake-shoe and a wheel.

Similar reference numerals indicate like parts in the several figures of the drawing.

1, is my improved brake-shoe secured to the brake-beam 3, by means of a thrust block 2, and screw bolt 4. The brake-shoe 1 is formed with a recessed brake surface 5, to contact with the flange 6, of the wheel and with a flat brake surface 7, to contact with the wheel at a locality outside of the line of contact of the wheel with the rail, so that any frictional wear upon the wheel by the brake-shoe will be each side of line of contact between the rail and the wheel.

Intermediate of the recess 5, and the flat surface 7, the brake-shoe is formed with an open sand conduit 8, through which the sand may gravitate in a curvilinear line and be delivered upon the track directly in front of and close to the wheel so that a minimum quantity of sand will insure the desired frictional contact between the tread of the wheel and the rail.

The sand conduit 8, is connected in any suitable manner with the sand box (not shown), by a flexible connection 9.

The sand conduit being in the face of the brake-shoe and intermediate its brake surfaces, it will be obvious that the integrity and durability as well as the strength of the brake shoe will not be impaired and it will also be obvious that the frictional contact of the shoe with the wheel each side of the sand conduit will produce a sufficient degree of heat to evaporate any moisture in the sand conduit and tend to a free delivery of the sand to the track, but if on the contrary for any reason the sand conduit should become clogged, the fact that one side thereof when not in contact with the wheel, is open it will be obvious that it may be readily relieved of any obstruction and particularly so in view of the novel means of connection between the brake-shoe and the brake-beam which I will now describe.

The rear face of the brake-shoe is formed with two curved recesses 10, each side of a solid web 11. The upper terminus of these recesses is of dove-tail form as shown by the dotted line 12 (see Fig. 4), and horizontal at the lower terminus as shown by the dotted line 13. The thrust block 2, is formed with curved projections 14, corresponding with the recesses 11, in the brake-shoe and adapted



to enter the same as clearly shown in Figs. 3 and 4, and when these projections are entered in the recesses 11, of the brake-shoe the thrust block and brake-shoe are secured in fixed relation by a suitable bolt 15, thus establishing a firm and solid relation between the two.

From the construction shown and described it will be seen, that when it becomes necessary to remove the shoe for any purpose it is only necessary to remove the bolt 15, and vibrate the thrust block 2, upon the bolt 4, and move the shoe in an upward direction, and that the shoe may be restored to its normal position or a new one substituted by reverse manipulation and that the thrust block and shoe become practically integral.

I am aware that it has been suggested to conduct the sand from a sand box through a closed conduit in the brake-shoe in rear of a duplex crescent shaped conduit in the brake face of the shoe to which latter conduit sand is admitted to intensify the frictional contact with the tread surface of the wheel, and that the shoe is also to be provided with another closed conduit for the passage of a lubricant to be delivered against the flange of a wheel, but it will be readily understood by those familiar with railroad requirements that the closed sand conduit through the shoe would be subject to the same liability of choking as in the case of the ordinary sand tube and present the same difficulties as to removing the impediments, and it will also be seen that the delivery of sand to the double crescent recess or pocket in the face of the brake-shoe will cause wear of the tread of the wheel at the same locality as that which takes place by reason of the contact of the wheel with the track rail which result should be especially avoided.

Having described the construction and advantages of my improvement what I claim as new and desire to secure by Letters Patent is—

1. A railway brake-shoe, comprising in its construction an open sand conduit in its face

adapted for connection with a sand supply at the upper end and to deliver sand to the track immediately adjacent to the wheel, substantially as hereinbefore set forth.

2. A wheel brake-shoe having an open sided passage extending through the face of the shoe from the upper to the lower end thereof for conveying sand to the track and means for directing sand into said passage, substantially as hereinbefore set forth.

3. A wheel-brake shoe having an open sided sand passage in the face of the same extending from the upper to the lower end, and with wheel brake surfaces each side of said open sided sand passage, substantially as hereinbefore set forth.

4. A wheel brake-shoe having in its rear face a recess terminating at the upper extremity in a downwardly and rearwardly inclined shoulder, and the lower terminus horizontal, in combination with a thrust-block having its extremities conforming with the extremities of the recess in the brake-shoe and adapted to enter said recess, and means for detachably connecting the brake-shoe and the thrust-block, substantially as and for the purpose set forth.

5. A wheel brake-shoe having in its rear face parallel recesses terminating at the upper end in downwardly and rearwardly inclined shoulders, and at the lower end in horizontal surfaces, and with a rib between the parallel recesses, in combination with a thrust-block having its ends corresponding with the terminals of the recesses in the brake-shoe and with a central rib and parallel ribs corresponding respectively with the recesses and ribs in the brake-shoe and means for detachably connecting the brake-shoe and thrust-block, substantially as set forth.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

ISAAC A. GIBBS.

Witnesses:

H. C. PENN,  
W. E. AIRHEART.