

(No Model.)

G. B. ROSS.

BRAKE SHOE.

No. 413,560.

Patented Oct. 22, 1889.

Fig.1.

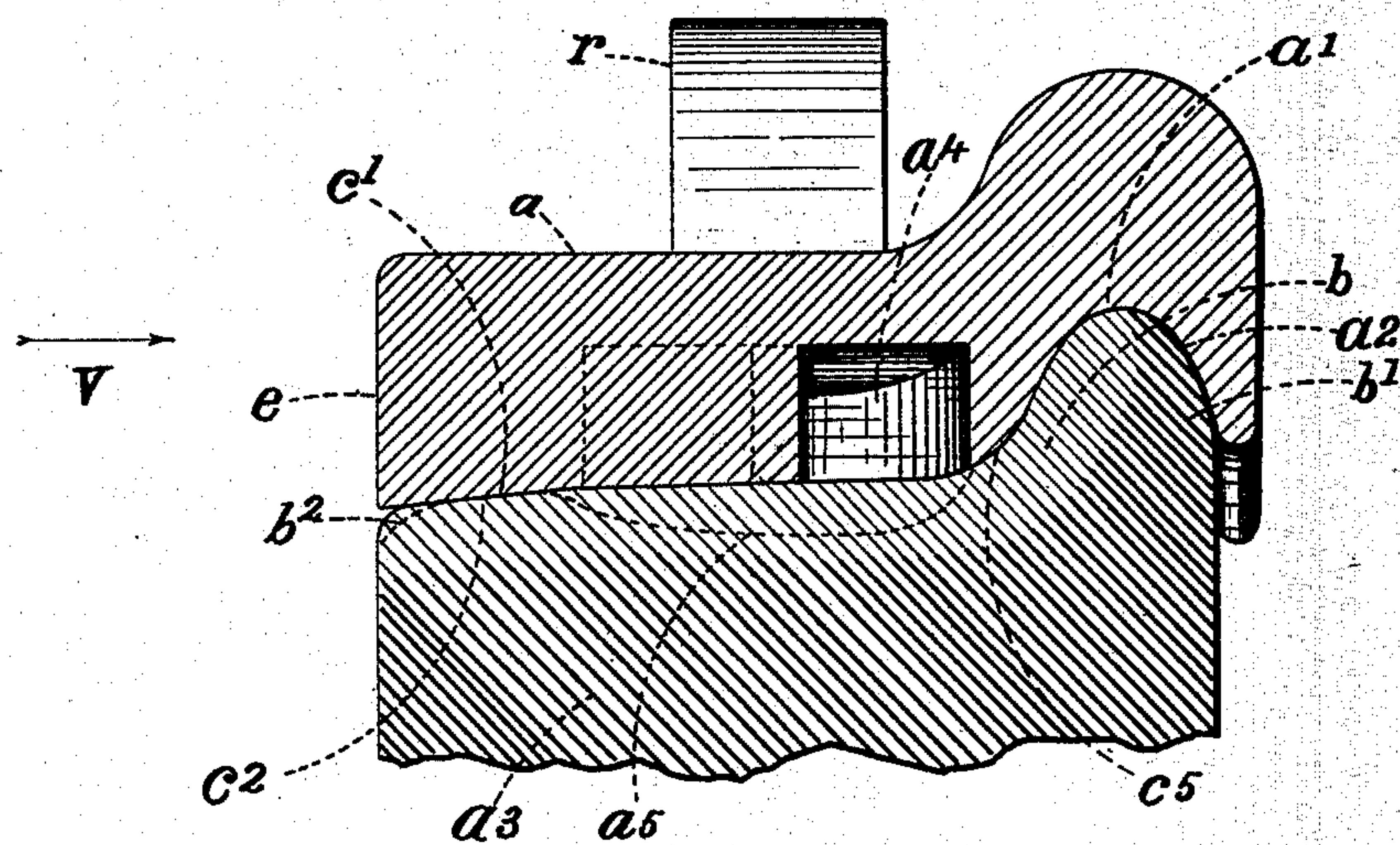


Fig.2.

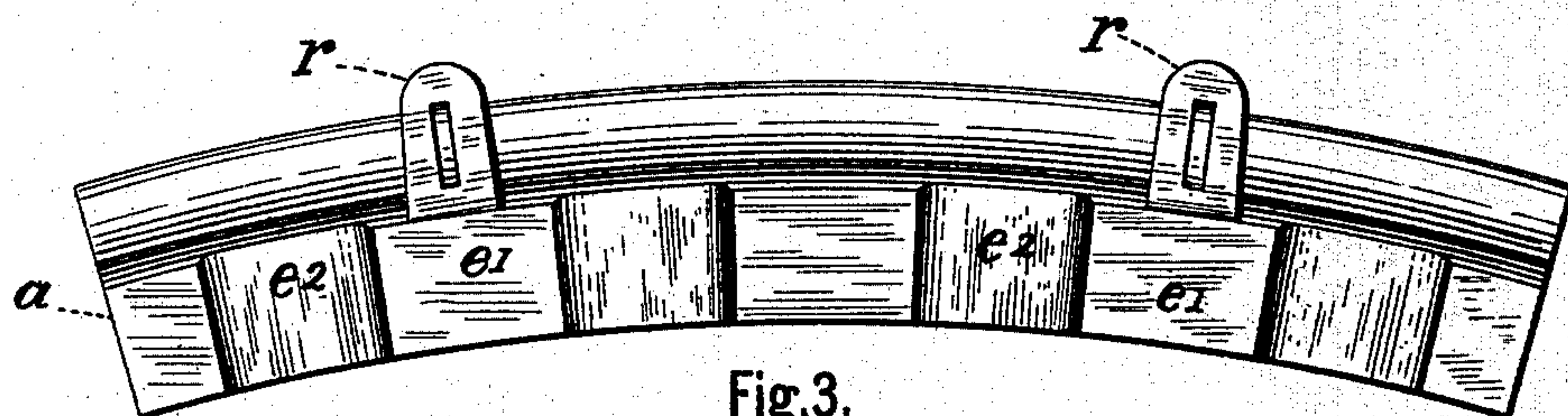
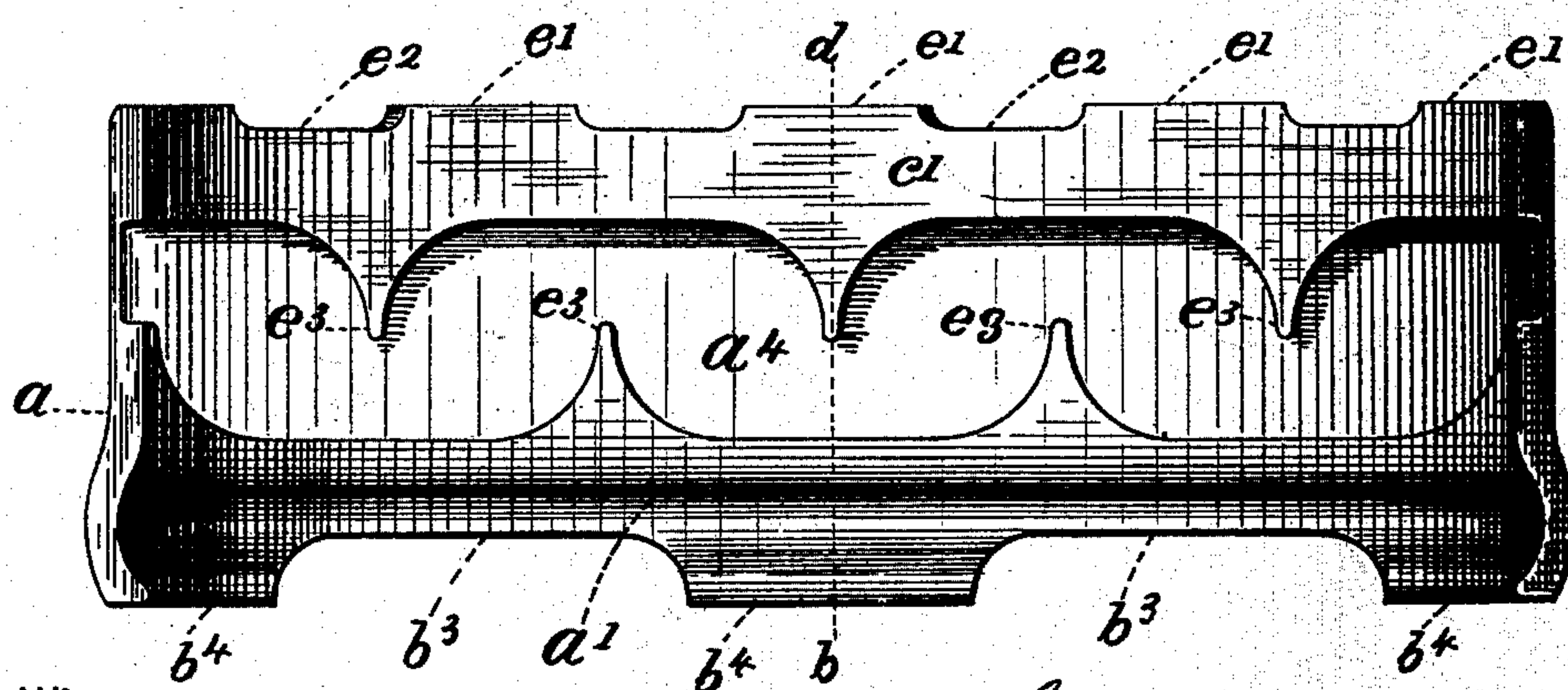


Fig.3.



Witnesses.

Witnesses.
Arthur J. Sangster
Robert A. Geary

George B. Ross - Inventor.
By James Sangster
Attorney.

UNITED STATES PATENT OFFICE.

GEORGE B. ROSS, OF BUFFALO, NEW YORK.

BRAKE-SHOE.

SPECIFICATION forming part of Letters Patent No. 413,560, dated October 22, 1889.

Application filed April 13, 1889. Serial No. 307,161. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. ROSS, 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.

My invention consists in certain improvements upon that class of brake-shoes described in my patent, No. 292,861, in which is shown a longitudinally-grooved shoe adapted for wearing away those portions of the wheel not worn by the track.

The object of my present invention is to do the same work more perfectly by means of a longitudinal open groove having tapering points projecting inward from opposite sides of the groove slightly past the center of the same, so as to graduate the wearing action of the shoe on the wheel to compensate more completely for the wear on that portion of the wheel which is worn by the rail, and also to certain improvements in the conformation of the outer sides of the wearing-face of the shoe, whereby the wearing of the inside edge of the face of the wheel is compensated for, and also for the wear on the flange, one side of which is harder than the other.

The object in using an open longitudinal groove is to avoid pockets in which sand, dust, or other matter may accumulate to accelerate the wearing of the parts in frictional contact and to permit a free passage for a current of cool air to carry off as much heat produced by the brake when in action as possible, 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 cross-section through a portion of a car-wheel and through the brake-shoe in or about line $d b$, Fig. 3. Fig. 2 is a reduced side elevation of the brake-shoe, looking in the direction of the arrow v , Fig. 1. Fig. 3 is a plan of the wearing-face of the shoe.

In said drawings, a represents the brake-shoe.

a' is the groove adapted to fit the flange a^2 of the wheel a^3 .

The portion b of a car-wheel (see Fig. 1, where the section-lines are made lighter, so

as to distinguish it from the other portions of the wheel) is what is technically termed "chilled," thereby making the face and inner side of the flange of the wheel extremely hard. The outside b' of the flange a^2 and the rest of the wheel are comparatively soft. The wheel is worn by the action of the rail about or substantially as shown by the dotted lines a^5 , (see Fig. 1,) thereby leaving a raised portion c^5 surrounding the wheel and rendering it liable to jump the track, and is very destructive to frogs and switches unless removed. At the opposite side b^2 of the wheel is another portion liable to be worn away by the running of the wheel over frogs or switches.

To compensate for the wearing of the several parts above mentioned I construct my brake-shoe as follows: The surface of the shoe rests on the inner side of the flange of the wheel, and the portion c^5 , which is hard, has a surface extending the whole length of the shoe, substantially as shown in Fig. 3. The outer side b' of the flange a^2 , being softer than the portions b and c^5 of the wheel, require less wearing-surface on the shoe. Consequently I cut from the outside b^4 of the groove a' the portions b^3 . (Shown in Fig. 3.) This construction relieves the shoe at that point and permits it and the portions beneath it to wear away sufficiently fast to allow it to have the required action on the harder portions of the wheel. The opposite side e of the shoe where the wheel is liable to be worn, as at b^2 , by passing over frogs or switches, is also provided with a reduced wearing-surface consisting of the surfaces c' , produced by the removal of the parts c^2 . The wheel not being subjected at this point to as much wear as at other portions, this reduced wearing-surface is all that is required to compensate for it. The wearing-surface c' of the shoe extends along its whole length, and is required to wear that portion c^2 of the periphery of the wheel not worn by the track.

To compensate for the wear of the wheel at the portion a^5 , I make a continuous groove a^4 along the whole length of the shoe, having inwardly-projecting tapering wearing portions e^3 . The points of the portions e^3 project sufficiently beyond a central line drawn through the groove to insure a uniform wear-

ing of the surface of the tread. This construction provides the means for wearing away or removing any inequalities that may be produced by the rail on any part of the wheel-tread or portion a^5 , and at the same time permits a free passage-way for air to pass through, for the purpose hereinbefore mentioned.

The object in extending the points e^3 from each side of the groove a^4 slightly past the center of the same is to insure a uniform wearing of that portion of the tread of the wheel designated by a^5 . If the portions e^3 did not project slightly beyond each side of the center of the groove a^4 , the wheel would be so worn as to leave a ridge surrounding the tread of the same, which would be detrimental to the wheel and to the rail.

In Figs. 1 and 2, r represents the lugs by which the shoe is attached in any well-known way to its operating mechanism.

In some cases the alternate bearings e' may

be dispensed with. They would then form a single bearing with the bearing-surface c' .

I claim as my invention—

1. A brake-shoe having those portions of its face which operate on the wheel-tread or come in contact with the rail provided with a recess extending the whole length of the shoe and having inwardly-projecting portions, the points e^3 of which project from opposite sides of and slightly past the center of the groove a^4 , substantially as and for the purposes described.

2. A brake-shoe having the side e provided with a series of openings e^2 , to reduce the wearing-surface on that side of the shoe, so as to compensate for the wearing of the edge b^2 of the wheel by the action of frogs and switches, substantially as described.

GEORGE B. ROSS.

Witnesses:

JAMES SANGSTER,

ARTHUR J. SANGSTER.