

931,093.

Patented Aug. 17, 1909.
 2 SHEETS—SHEET 1.

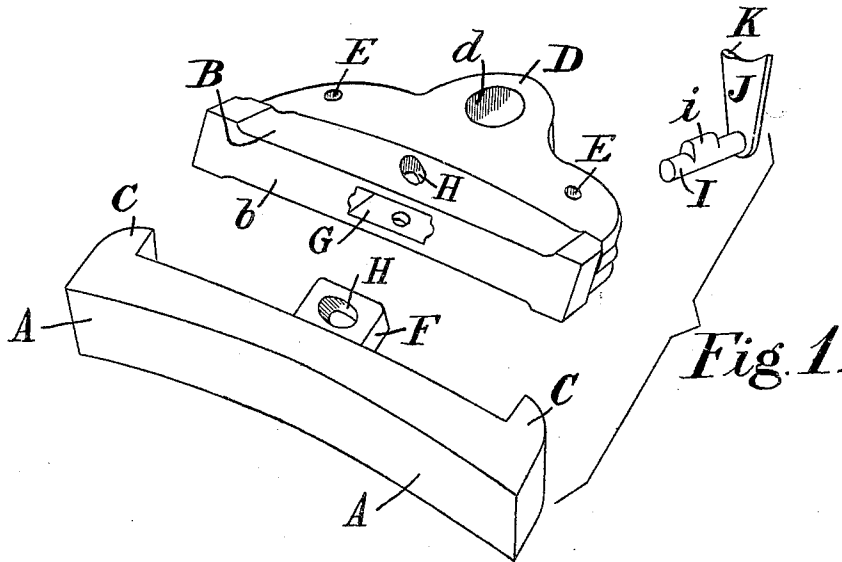
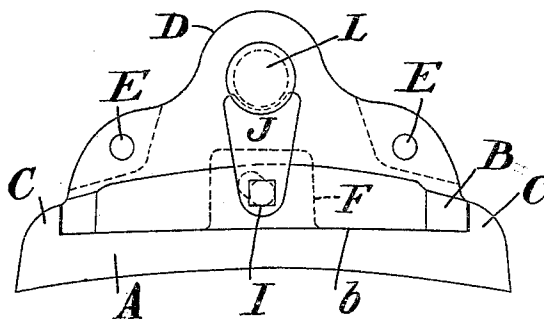


Fig. 2.



Witnesses:

S. E. Dodge.
 N. G. Keim

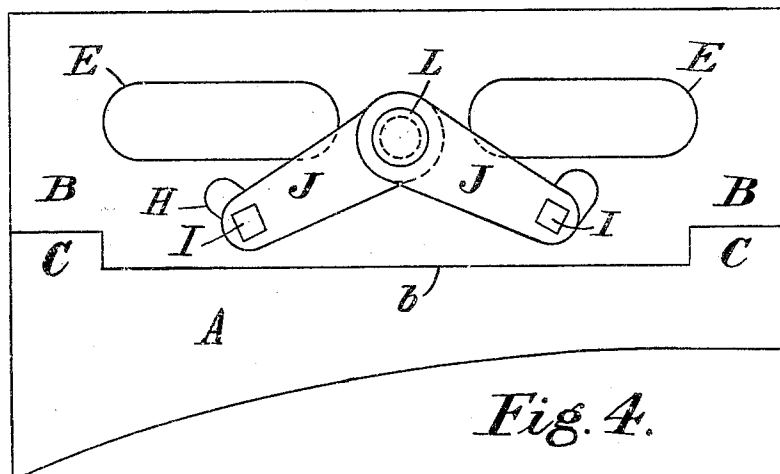
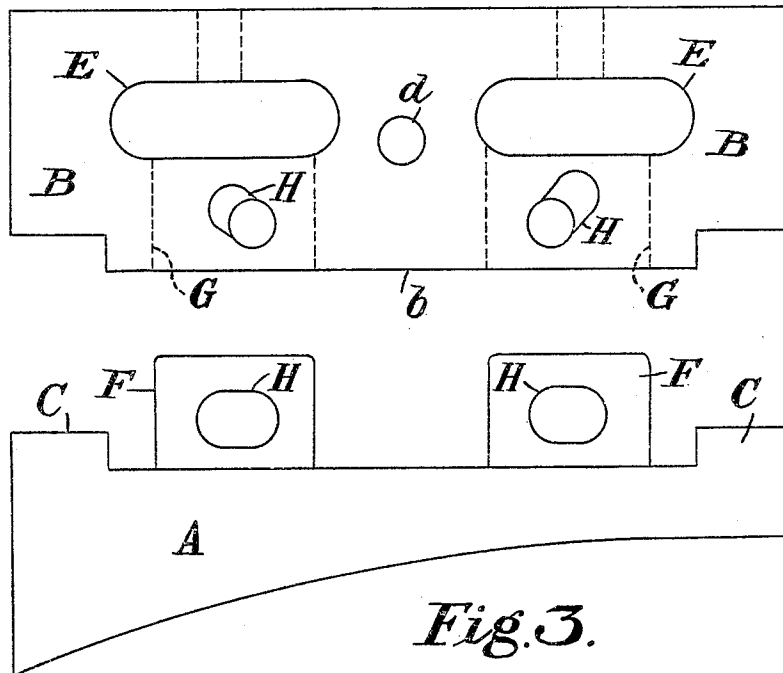
Inventor:

Charles Christopher Woodman Simpson,

By William Phillips Thompson,
 Attorney.

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 2 SHEETS—SHEET 2.



Witnesses:

S. E. Dodge.
 W. G. Kim.

Inventor.

Charles Christopher Woodman Simpson,

By William Phillips Thompson,
 Attorney.

UNITED STATES PATENT OFFICE.

CHARLES CHRISTOPHER WOODMAN SIMPSON, OF WIGAN, ENGLAND.

FRICTION BLOCK OR SHOE.

No. 931,093.

Specification of Letters Patent.

Patented Aug. 17, 1909.

Application filed January 4, 1909. Serial No. 470,588.

To all whom it may concern:

Be it known that I, CHARLES CHRISTOPHER WOODMAN SIMPSON, a subject of the King of Great Britain, residing at Wigan, in the

5 county of Lancaster, in the Kingdom of England, have invented certain new and useful Improvements in or Relating to Friction Blocks or Shoes, of which the following is a specification.

10 This invention relates to cast iron brake blocks, electrical collector slippers, and like frictional shoes, and refers to that class of block provided with a shoe which when worn

15 through can be detached, and a new one applied instead.

The invention will be understood from the following description, reference being had to the accompanying drawings, in which—

20 Figure 1 is a perspective view showing the holder, shoe and locking pin separated; Fig. 2, the holder shoe and pin in position ready for use; Fig. 3, an elevation of a block and shoe of a different pattern separated; and

25 Fig. 4, an elevation of the same ready for use.

As applied to brake blocks, I provide a shoe or wearing part A and a holder B. Its front face *b* is made the same curve as the rear face of the shoe A, and against this

30 holder the shoe A can bed or seat itself, there being at or near each end of the shoe, a shoulder C which abuts against each end of the holder. In the holder is located the hanger holes E, and at rear of the holder is the ear

35 D with transverse hole *d*, through which a bolt L can be passed, and fastened by a split pin, cotter or nut, et cetera. The rear face of the shoe has a lug or knob F cast thereon, and the holder is made jaw-shaped, or with

40 a slot G or otherwise, to receive the lug F. Through the holder B and through the lug F, I drill a hole H, and by passing a pin I through these holes the shoe A is locked to the holder B, or by removing the pin I the

45 shoe can be separated from the holder. This pin is made, at or near mid-length, with an oval or cam-shaped part *i*, while for the remainder of its length it is round, and one end of the pin is provided with a radial arm

50 J, with an embayment K at end, adapted to partly embrace the bolt L aforesaid. The locking pin hole at one side of the holder B is made of such a shape as to allow of the cam-shaped part *i* to be passed through it.

55 Then when the pin is in position, by turning the said pin I a part of a turn, it will lock

itself in the holder and cannot be withdrawn. The hole H in the shoe lug F is enlarged, to permit of the cam shaped part *i* working therein.

60 The mode of action is as follows:—To fasten the shoe to the holder, the shoe is presented rearwardly to the front face of the holder B, and the abutments C at the ends made to engage the holder. The locking pin 65 I is then passed into the hole H, to lock the two parts together, and by turning it on its axis the cam-shaped part *i* is put eccentric with the hole H in the holder so that the pin cannot be withdrawn. In this position, the 70 end of the arm J will lie in close proximity to the bolt hole *d* in the ear D of the holder. The insertion of the bolt L therefore will engage the embayment K at the end of the arm J, and lock the arm, so that the pin I 75 cannot be turned back. Consequently the shoe A cannot separate from the holder B, and the locking pin I cannot be withdrawn as it is held in the locked position by the bolt L engaging the arm J. Both the shoe 80 and the holder are held locked together even if the shoe should break. A further feature is, that the turning of the arm J into the position shown in Fig. 2, will cause the cam *i* to bind against the slot H in the shoe and 85 tighten it firmly against the holder B. To detach the shoe the cotter, split pin or nut is removed, the bolt L withdrawn, and the pin I turned into such a position, that its cam-shaped part *i* will register or come concentric 90 with the hole H, so that it may be withdrawn. When withdrawn, the shoe will then at once come off. The shoe by this invention can be worn down by use until quite thin before it is necessary to detach or re- 95 place it.

The block shown in Figs. 3 and 4 is constructed on exactly the same lines as already described, the main difference being that there are two lugs F on the rear of the shoe 100 A, and two corresponding recesses G in the holder, and a pair of locking pins I with arms J. The arms are in this case not provided with an embayment at the ends, but have holes through which the pin L is 105 passed. Furthermore the rear face of the shoe and the front face of the holder are in those figures made straight instead of curved. The same letters in these figures refer to like parts in Figs. 1 and 2.

110 I have described my invention more especially as applied to cast-iron brake blocks,

but it is obvious it can be applied equally well to electrical collector slippers, and like frictional shoes. The application of the invention to these purposes will be sufficiently obvious without further description.

I declare that what I claim is:—

1. In a brake-block, a detachable portion or shoe in combination with a fastening for securing the same to the permanent portion, consisting of an interlocking pin having a cam-shaped part, which pin on being passed through transverse holes in the permanent portion and the removable shoe, and turned, locks by means of this cam-shaped part and the hole, the two portions, and binds them, together.

2. In a brake-block, the combination with a permanent portion or holder and a detachable portion or shoe, of a projecting portion or portions on one part, and a recessed portion or portions on the other part to receive the projecting portions, a pin having at or about mid-length a cam-shaped part passed through transverse holes in the said projecting portion and recessed portion, and so made that when turned into one position the pin will lock the shoe to the holder, or when turned into another position will enable the pin to be withdrawn and the shoe removed.

3. In a brake-block, the combination with a permanent portion or holder and a detachable portion or shoe, of a pin having at or about mid-length a cam shaped part passed through transverse holes in the lug and jaw of the permanent and detachable portions of the block, the holes being so arranged that when the pin is turned in the hole its cam-shaped portion will bind against the sides of the hole in the lug and tighten the shoe against the holder.

4. In a brake-block, the combination with a permanent portion or holder and a detachable portion or shoe, of a pin having at or about mid-length a cam-shaped part passed through transverse holes in the said holder and shoe to interlock them together, a radial arm at the end of the pin and a bolt or pin passed through the permanent portion or holder for engaging the end of the said arm to hold it in the interlocking position.

In witness whereof, I have hereunto signed my name this 18 day of December, 1908, in the presence of two subscribing witnesses.

CHARLES CHRISTOPHER WOODMAN SIMPSON.

Witnesses:

H. D. JAMESON,
F. L. RAND.