

(No Model.)

W. W. WHITCOMB & F. F. COGGIN.
BRAKE SHOE.

No. 573,252.

Patented Dec. 15, 1896.

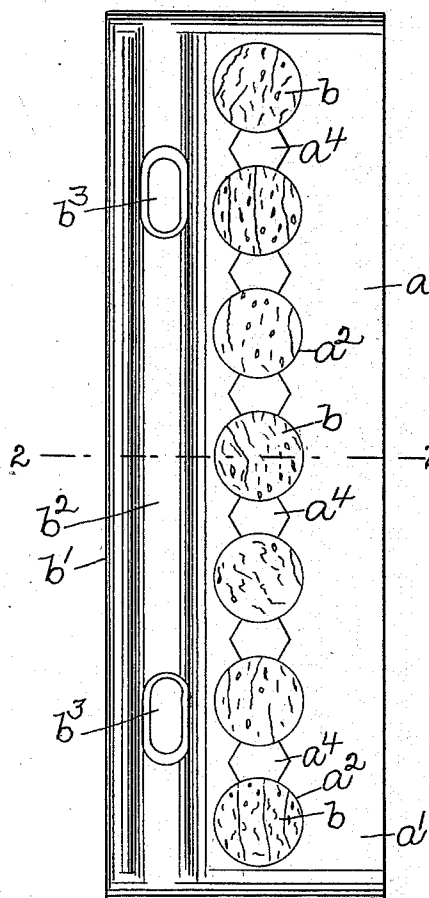


Fig. 1.

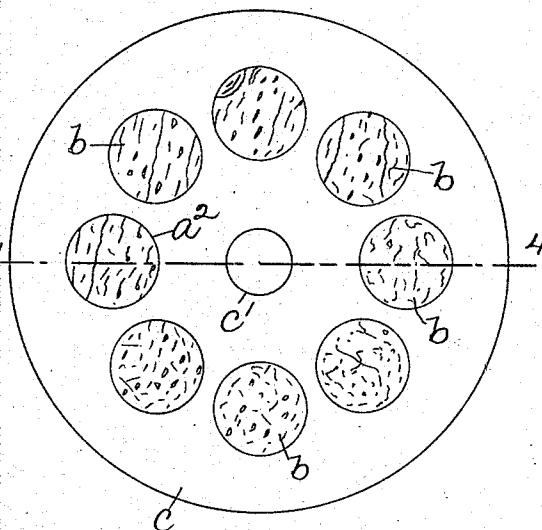


Fig. 3.

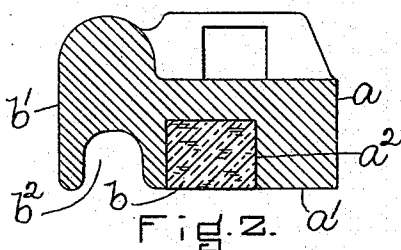


Fig. 2.

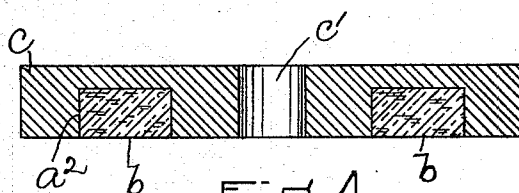


Fig. 4.

WITNESSES.

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UNITED STATES PATENT OFFICE.

WILLIAM W. WHITCOMB, OF BROOKLINE, AND FRANK F. COGGIN, OF WAKEFIELD, MASSACHUSETTS, ASSIGNORS TO THE COMPOSITE BRAKE SHOE COMPANY, OF BOSTON, MASSACHUSETTS.

BRAKE-SHOE.

SPECIFICATION forming part of Letters Patent No. 573,252, dated December 15, 1896.

Application filed October 16, 1896. Serial No. 609,064. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM W. WHITCOMB, of Brookline, in the county of Norfolk, and FRANK F. COGGIN, of Wakefield, in the county of Middlesex, State of Massachusetts, have invented an Improvement in Brake-Shoes, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to a clutch or brake-shoe especially adapted, among other uses, to be employed on railway-cars, and more particularly steam or electric railway cars which run at a high speed. Prior to this invention we are aware that composite brake-shoes have been made of metal with wooden plugs inserted into suitable sockets or holes in the said metal and locked therein by suitable devices. Such brake-shoes are efficient for service on street-railway cars which do not run at a very high speed, but such brake-shoes are more or less defective or deficient for use on railway-cars which run at a high speed, such as is obtained on steam-railroads and also on some branches of railways operating with electricity. The defect or deficiency referred to is due to the severe usage to which the brake-shoe is put, for, owing to the high speed of the car, great friction is created when the brake-shoes are applied to the rapidly-revolving car-wheels, and this friction creates great heat and subjects the wooden plugs to such heat as to rapidly shrink the same to such extent that they are liable to become loose in their sockets, notwithstanding the firm manner in which they are put into the said sockets, and as a result the wooden plugs are liable to crumble and work out of their sockets, and the usefulness of the shoe is thereby greatly impaired.

It is the object of this invention to provide a clutch or brake-shoe of composite construction which is particularly well adapted, among other uses, to be employed on steam and electric or other railways on which the cars run at a high speed, and, by experiment, we have ascertained that a clutch or brake-shoe composed of metal having sockets or openings filled with compressed sections or blocks of

cork is not open to the objections above referred to, as will be described, but, in addition, gives increased braking effects, thereby particularly adapting such a brake-shoe for use on cars which run at a high speed.

Our invention therefore consists in a composite brake-shoe, such as will be pointed out in the claims at the end of this specification.

Figure 1 is a front elevation or face view of a composite brake-shoe embodying this invention; Fig. 2, a transverse section on the line 2 2, Fig. 1; Fig. 3, an elevation of a modified form of clutch or brake-shoe embodying this invention; and Fig. 4, a section on the line 4 4, Fig. 3.

Referring to the drawings, Figs. 1 and 2 represent one form of brake-shoe applicable for use with the flanged wheels of steam and electric railway cars, the said brake-shoe consisting of a body *a*, having its wheel-contacting face *a'* provided, as herein shown, with a plurality of sockets, holes, or openings *a²*, which in the present instance extend but partially through the body *a*. In the present instance the sockets or holes *a²* are shown as cylindrical in form and in substantially the same straight line with intervening openings *a⁴*, which connect the adjacent sockets *a²*, so as to form a substantially continuous longitudinal slot varying in width at intervals, the said sockets and connecting openings being located in that part of the face of the shoe which is in the same plane as that part of the tread of the wheel worn by the rail. The sockets *a²*, in accordance with this invention, are filled with sections or blocks *b*, of cork, which, before being inserted into the sockets *a²*, are preferably of larger diameter or area than the said sockets, and which are therefore materially compressed when inserted into said sockets.

The cork sections or blocks *b* impart to the brake-shoe increased braking efficiency, and when heated do not become loose in their sockets, but expand under heat and consequently adhere firmly to the walls of the sockets.

The metal body *a* of the brake-shoe is cast and the walls of the sockets are not smooth, but are more or less roughened or uneven, and

when the cork blocks or sections are forced in their compressed condition into the said sockets the elastic nature of the cork causes it to expand, and the yielding or substantially
 5 soft structure of the cork permits it to substantially conform to the roughened surface, so that the cork block or section is in this manner firmly held in its socket, and when the cork is heated in the application of the
 10 brake-shoe to the car-wheel it is expanded so that it still further engages the roughened or uneven surfaces or walls of the sockets with increased force, which enables the blocks or sections to be used with brake-shoes having
 15 sockets perfectly cylindrical and without the use of locking devices. The soft nature of the cork also augments the adhesion of the brake-shoe to the car-wheel and thereby increases the efficiency of the brake-shoe. In
 20 the present instance we have shown the body a of the brake-shoe as provided with a flange b' , having a longitudinal curve b^2 adapted to fit the flange of the car-wheel, but we do not desire to limit our invention in this respect, as it
 25 is evident that the cork sections may be employed in a body without the flange b' . We have also shown the cork sections b as arranged in substantially a straight line and inserted into sockets, so as to make contact
 30 with the portion of the tread of the wheel worn by the rail, but, while we may prefer this construction, we do not desire to limit our invention in this respect, as additional cork sections may be inserted into that portion
 35 of the brake-shoe making contact with the tread of the wheel not worn by the rail. The flange b' of the brake-shoe shown in Fig. 1 is provided with openings b^3 , as herein shown, for the passage of dirt, &c., through the shoe.
 40 In Figs. 1 and 2 we have shown a brake-shoe for use on railways, but we do not desire to limit ourselves to the particular form of

shoe, as the cork sections b may form part of a brake-shoe or clutch of other forms, such, for instance, as shown in Figs. 3 and 4, wherein
 45 the metal body of the brake-shoe is shown as a disk c , provided with an opening c' , which adapts it to be mounted upon a suitable shaft, and having in its face sockets a^2 for the reception of the cork sections b .
 50

We claim—

1. As an improved article of manufacture, a composite brake-shoe consisting of a metal body portion provided with one or more sockets or openings, and a cork block or section
 55 fitted into said opening and retained therein by the expansion of the cork in its socket, substantially as and for the purpose specified.

2. As an improved article of manufacture, a brake-shoe provided with a plurality of
 60 sockets a^2 and connecting intervening openings a^4 formed in that part of the body portion in line with the portion of the tread of the wheel worn by the rail, and cork sections or blocks inserted into the sockets a^2 in a compressed state, substantially as and for the
 65 purpose specified.

3. As an improved article of manufacture, a composite brake-shoe consisting of a body portion provided with a plurality of sockets
 70 or openings, and a plurality of compressed cork sections inserted into said sockets or openings and retained therein solely by the expansion of the cork, substantially as described.
 75

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILLIAM W. WHITCOMB.
 FRANK F. COGIN.

Witnesses:

JAS. H. CHURCHILL,
 J. MURPHY.