

No. 661,705.

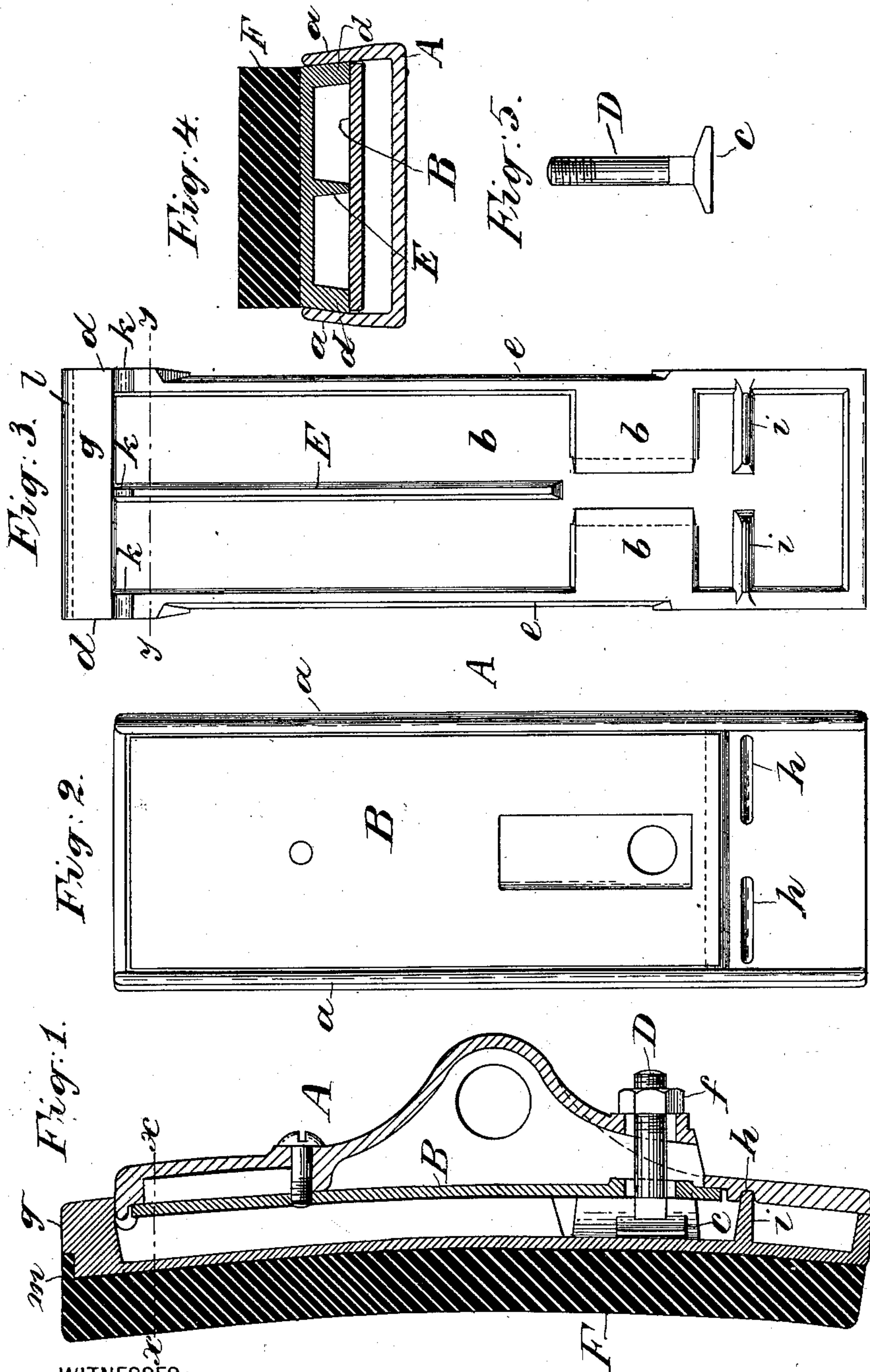
Patented Nov. 13, 1900.

M. POTTER.

BRAKE BLOCK SHOE.

(Application filed Aug. 28, 1900.)

(No Model.)



WITNESSES:

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MORGAN POTTER, OF FISHKILL-ON-THE-HUDSON, NEW YORK.

BRAKE-BLOCK SHOE.

SPECIFICATION forming part of Letters Patent No. 661,705, dated November 13, 1900.

Application filed August 28, 1900. Serial No. 28,288. (No model.)

To all whom it may concern:

Be it known that I, MORGAN POTTER, a citizen of the United States, residing at Fishkill-on-the-Hudson, in the county of Dutchess and State of New York, have invented certain new and useful Improvements in Brake-Block Shoes and Means for Securing Same; 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 has relation to brakes of the kind ordinarily employed in connection with the wheels of carriages, wagons, and other road-vehicles, and especially does it relate to the shoes or removable pieces located in the brake-blocks and to means for securing the shoes in the blocks.

The objects of my invention are to provide or produce a simple, cheap, and efficient form of brake-shoe which may be used for application against any species of tire without unnecessary damage thereto, which shall be light and at the same time abundantly strong, which shall be easy to locate in proper position and as easy to dismount when required, and to supply the shoe with novel and efficient means for locking and securing it in position within the brake-block.

To accomplish these objects and to secure other and further advantages in the matters of construction, operation, and use, my improvements involve certain new and useful peculiarities of construction and relative arrangements of parts, as will be herein first fully described and then pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a central vertical section and elevation of a brake-block with my improved form of shoe located and locked thereon in accordance with my invention, the brake-block shaft and usual interior spring being omitted and the shoe being shown as supplied with a facing of rubber or equivalent material, as is in some cases contemplated. Fig. 2 is an elevation showing the inner side of the brake-block as it appears when the shoe is detached. Fig. 3 is an elevation of the shoe as it appears when removed from the brake-block, showing its

inner face. Fig. 4 is a cross-section through the shoe and brake-block at line *xx* of Fig. 1 or line *yy* of Fig. 3, illustrating the dovetail joint at the upper part of the device. Fig. 5 is an elevation of the coupling-bolt detached, showing the beveled head which engages with parts of the shoe.

In all the figures like letters of reference wherever they occur indicate corresponding parts.

A represents the brake-block which sustains the shoe. This block is usually of cast metal and when in use is hung on a suitable brake-block shaft. So far as my present invention is concerned the block may be hung in any way and be of any of the usual forms and sizes, it being only necessary that it shall be prepared to receive and hold the shoe in the manner required. It is employed to carry the shoe into contact with the vehicle-tire or to hold the same free from the tire, as occasion demands.

B is the usual interior metallic cover for the spring-cavity in the block, the same being employed only in the special form of block represented and omitted in other forms having no spring-cavity.

The side walls *aa* of the brake-block are inclined slightly toward each other, as shown in Fig. 4. These inclined walls have heretofore been used to bear against the correspondingly-inclined sides of the shoe throughout the entire length of the latter, requiring the latter to be fitted in place and when wedged making it difficult to remove the shoe. The shoe as heretofore employed has been cast in the form of a solid block, making it heavy and difficult to fit and embodying much unnecessary metal and consequent expense.

C represents my improved shoe, of which the outer face is comparatively smooth or unbroken, the back of the shoe being fashioned to amply sustain the outer face thereof, affording the requisite strength therefor and supplying the means by which it may be securely coupled to the brake-block, easily and quickly applied in place and as easily dismounted when necessary.

Heretofore in mounting the shoes in the brake-blocks they have been locked by bolts passing through the shoes and through the blocks. The heads of these bolts being of

different material from the shoe and for other reasons cut into the tires or cause an uneven wearing of the shoes, either of which effects is undesirable and detrimental, as will be apparent. It is my purpose to locate the head of the locking-bolt at the back of the shoe, so that it cannot be reached by the tire unless the shoe be entirely cut or worn through. For this purpose I extend the material of the shoe toward the center line from each side, forming lugs, as at *b b*, leaving an opening between these two parts to receive the head of the locking-bolt. The walls forming the opening are undercut or inclined, as indicated, to receive the corresponding beveled head of the locking-bolt.

D is the locking-bolt having the beveled head *c*, which is received between the parts *b b* before the shoe is dropped into place. The upper end of the shoe at both sides, as at *d d*, is inclined to fit between the walls *a a* of the brake-block, the remaining portions of the sides of the shoe being plain or slightly recessed, as indicated at *e e*, and made narrow enough so as to easily enter between the walls *a a*. This forms what is commonly known as a "dovetailed" joint between the two parts. The locking-bolt being held between the parts *b b* is started in the openings provided for it through the cover B (if there be one) and through the back of the brake-block and then the shoe dropped into place and wedged to its final location, the head of the bolt moving easily in the opening provided for it in order to accommodate this adjustment. When in place, the nut *f* on bolt D is turned down and holds the shoe. Thus it will be seen that the head of the bolt is located entirely back of the shoe, so that the shoe must be worn through before the bolt-head can touch the vehicle-tire.

The shoe has a projecting top piece *g*, which bears upon the top of the brake-block, as has heretofore been shown. This is amply sufficient to prevent the shoe from being crowded down in its seat. To overcome any tendency of the shoe to rise in its seat, the brake-block is recessed, as at *h h*, and the shoe is supplied with projections, as at *i i*, calculated to enter the said recesses. When thus formed and locked in place, the shoe can neither move up nor down until the nut *f* is released. Without some means of preventing any upward movement of the shoe it might possibly slip on the bolt-head. The construction shown enables me to relieve the bolt or its head from all strain due to any tendency of the shoe to move up or down on its seat in the block and to maintain the shoe against up or down movement by means independent of the bolt. The shoe thus made is quite light, and the pressure against the tire is most apt to be at the central part. To stiffen and strengthen the shoe at this point, I supply it with a central longitudinal rib, as at E, which rib may bear against the cover B, but which is suffi-

cient to afford the required strength whether it touches that portion or not. This rib is stopped short of the opening between the portions *b b*, so as not to interfere with the location of the locking-bolt.

The improved shoe is easily cast and requires no fitting except at the short inclined portions *d d*. Its sides and its central rib are shown as recessed slightly at *k k k*. This is for the purpose of obviating the grinding or fitting at these points which would otherwise be necessary to remove the surplus metal which almost invariably appears in sharp angles of such a casting.

The improved shoe may of course be made of any desired thickness. If intended to bear directly against the tire, the more metal it contains the longer it will wear, and it may be used in this way, if desired. It is preferably made of either brass or iron, and if for use on a rubber-tired vehicle brass is considered more desirable than iron.

My invention contemplates supplying the shoe with a rubber or equivalent block or facing—such as represented at F, for instance—in cases where such a facing may be preferred. The light shoe is well adapted for use with the facing, which when worn out may be easily replaced, or if the shoe is to be discarded for an entirely new one little loss will be occasioned. The rubber is cemented or otherwise securely joined with the face of the metallic shoe, its upper part being specially secured in place by overlapping the upper part *g* of the shoe, which for this purpose is supplied with a recess or is rabbeted, as at *l*, to receive the overlapping portion *m* of the applied facing. The end of the facing and the end of the shoe are generally made to terminate in the same plane, so as to produce a proper finish.

The improvements above specified are mainly intended for use in brake-blocks to be applied on the higher grades of vehicles, particularly such as employ rubber-tired wheels, either solid or inflated; but obviously they may be used in any grades, and they will be found to admirably answer all the purposes or objects of the invention previously indicated herein.

Having now fully described my invention, what I claim as new herein, and desire to secure by Letters Patent, is—

1. In combination with a brake-block shoe having projections as explained and a brake-block adapted to receive said projections, a locking-bolt the head of which engages with the material of the shoe at the back thereof, said bolt passing through the block and arranged to lock the shoe without passing through the latter, substantially in the manner and for the purposes set forth.

2. The combination as before set forth of the brake-block recessed as explained, the brake-block shoe having the sustaining projections and the lugs at the back and the

locking-bolt having a beveled head, the lugs having inclined walls to admit and hold the bolt-head between them, substantially as shown and described.

5 3. In combination with a brake-block having inclined walls, a brake-shoe having a short portion at top fitted to enter between said walls, projections at the lower part to enter corresponding recesses in the block, 10 and means for locking the shoe to the block, substantially as shown and described.

4. In a brake-shoe provided with means for locking it to the brake-block, the central longitudinal sustaining-rib located at the back 15 of the shoe, substantially as shown and described.

5. The herein-described brake-shoe, the same having the short inclined side portions at top, the lugs for receiving the head of the 20 locking-bolt, the projections for engaging the interior of the block, and a central longitu-

dinal sustaining-rib, substantially as shown and described.

6. In combination with a metallic brake-shoe rabbeted at top and having sustaining 25 projections and bolt-holding lugs as explained, a facing applied on said shoe and fitting the rabbeted portion thereof, and the brake-block arranged to receive and hold said shoe, substantially as shown and described. 30

7. In a brake-shoe having the overhanging portion at top for engagement with the top of the brake-block, the sides and central rib at the back of the shoe, each recessed beneath the overhanging portion, substantially as 35 shown and for the purposes set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

MORGAN POTTER.

Witnesses:

I. B. CAMMACK,
M. E. CURTISS.