

J. W. MOFFITT.

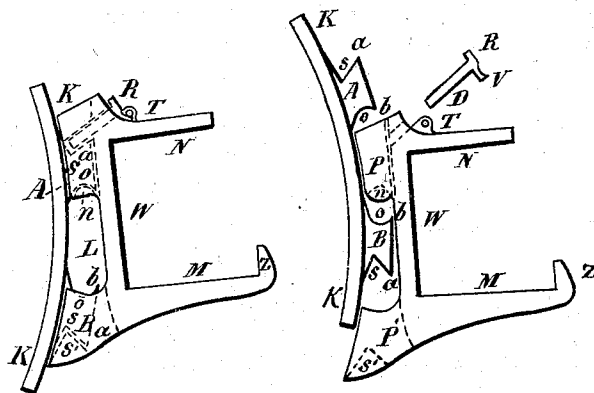
Brake Shoes.

No. 138,514.

Patented May 6, 1873.

Fig. 1.

Fig. 2.



Witnesses

Theophilus Weaver.

D. A. Kepner.

Inventor

John W. Moffitt.

UNITED STATES PATENT OFFICE.

JOHN W. MOFFITT, OF HARRISBURG, PENNSYLVANIA.

IMPROVEMENT IN BRAKE-SHOES.

Specification forming part of Letters Patent No. **138,514**, dated May 6, 1873; application filed March 19, 1873.

To all whom it may concern:

Be it known that I, JOHN W. MOFFITT, of Harrisburg, county of Dauphin and State of Pennsylvania, have invented an Improved Brake-Shoe, of which the following is a specification:

My invention consists, first, in a shoe provided with two similarly-formed double-hooked tenons, placed obversely to each other and equidistant from the convex-arch middle, in connection with a holder or block provided with two corresponding mortises or pockets, in such form and position that the shoe may be reversed or inverted to utilize both ends thereof, and that it may be applied alternately on both sides of the truck to utilize both sides of the face of the tire; second, in arranging and spacing the interlocking abutments or parts, so that the intermediate spaces may allow the shoe to be removed sidewise from the holder by a limited vertical displacement to avoid hindrances that render greater vertical shifting objectionable; third, in the peculiar form of the tenons of the shoe and of the bits or rests in the holder, by the conjoint action of which they are made to hug each other and to bear greater stress, to be noise and snap proof, and can be kept keyed perfectly taut; fourth, in the keying device, consisting of a rectangular lock-bar whose outer end or head is two-parted, like a claw-hammer, and a lug on the shoe-holder, over which the claw-head is passed and kept in place by a wire tab, through an eye in said lug, outside of said claws.

In the accompanying drawing making a part of this specification, Figure 1 is a side elevation of my improved shoe, in which the shoe and the shoe-holder are represented in position for brake use. Fig. 2 is a side elevation of my invention, showing the keying device removed and the shoe vertically shifted from its seat in the holder sufficiently to allow it to be detached sidewise.

Similar parts are similarly marked in the following general description.

K is the shoe. A B are the tenons thereon. W is the shoe holder or block. N M are its carriers or attachments for the brake-bar. P P' are the tenon sockets, pockets, or mortises in the shoe-holder frontlets. *n s'* are the rests

or bits between the frontlet-cheeks. R is the lock-bar of the keying device. T is the rear lug on the holder W, in which a wire tab stops the lock-bar to keep it from undoing. The shoe K is in form a tire segment, slightly rounded on its back or rear side, and its matrix in the frontlets of the holder is slightly hollow or dished vertically. On its oval side are formed the double-hooked tenons A B on its vertical middle, equidistant from its transverse middle. The tenons A B are made similar, each being an oval hook, *o*, on its inner side and an angular hook, *s*, on its outer side. Both hooks of the tenon are extended by a sharp pitch to the limit of the tenon-crown *a b* so that the hook-crown is truncate vertically but flat transversely, and the angle *s* and the curve *o* are made to cut the tenon-body, relatively or exchangeably, so as to economize its strength. The angle of the hook *s* is less than a right angle, so that stress on the shoe may tend to bind the tire against the holder-frontlets when the hook is hooked on the bit *s'*, and the correlative curved hook *o* of the other tenon is kept securely on the rest *u* by the conjoint act of the lock-bar D on the adjacent straight side of the tenon, and by the pitch of said straight side, and by the curve of the rest or bit *n*. The holder or block W is made to receive the shoe into and against the frontlet P above and P' below. The frontlets are recessed vertically by parallel-walled pockets wide enough to admit the flat-sided tenons snugly. The cheeks of the frontlets are massed together at the lower ends of the pockets by the oval and angular bits *n s*, behind which are left openings to allow dust or other impediments to drop out of the pockets. The summit of the oval bit *n* and the apex of the angular bit *s'* are further from the boundary curve between the shoe-tire and the frontlet-cheeks than the corresponding summit and apex of like parts of the tenons are, so that when the force of gravity or brake-tension is on the shoe it will be firmly drawn against the cheeks of the frontlets, thus rendering it noiseless and snap-proof. The frontlet-abutments are spaced apart far enough to allow the tenons free exit sidewise when the shoe is shifted vertically, as shown in Fig. 2. The distance from tenon to tenon is therefore a little greater than the

vertical measure of the frontlet-arch to facilitate said sidewise displacement.

The sidewise detachment of the shoe from the holder is thus effected by comparatively little vertical shifting, thus avoiding the objections urged against shoes in which greater throw is required, and consequently more hindrances are encountered. Moreover, the form of the tenons and the corresponding bits is such that the shoe may be inverted should one end of the tire wear more rapidly than the other. Thus its whole extent may be utilized. Besides, it can be applied alternately on opposite sides of the truck, so that both sides of the face of the tire may be utilized.

The incisions in the tenons to form the hooks on the shoe are made alternately, so that the dent of the angle and the cut of the curve may not bite the tenon-body oppositely, thus economizing all the available strength of the body, and consequently avoiding the grave objections urged against oppositely-cut dovetails.

I do not limit my improvement to the couple of an angle and a curve, as couples of two angles, or two sharp curves, may be employed in the manner shown, the principle being in either case to bite the tenon-body alternately, not oppositely.

The keying device consists of the rectangular lock-bar D, fitting into a surplus rectangular cavity above the tenon edge *as* when in place in the upper frontlet-abutment, as shown in Fig. 1. The outer end of the lock-bar is turned-up-lip form to hold by in removing it, and has the lower part of its head divided, claw-hammer form, with the curve of the claw reversed to receive a wire tab, which is passed through an eye in a lug, T, after the lock-bar is entered to its place. The claws bestride said lug in

entering the lock-bar to its place, and, when in place, the wire tab is passed snugly through said lug against said claws. The wire tab checks the jumps or jostle of the lock-bar, and the lock-bar checks the reaction or concussion of the shoe in the act of braking.

It will be observed also that my improvement is very compact or close-hitched, and especially adapted for air-brakes, in which as little lost motion as possible is desired to prevent much throw or stroke of the piston mechanism.

Should my device be deemed too solid, a layer of rubber can be inserted between the holder-frame W and the brake-bar when they are bolted together.

I claim—

1. The shoe K, having the two similarly-formed double-hooked tenons A B, in combination with the bits *ns* in the holder W, interlocking vertically, the shoe being reversible, substantially in the manner as and for the purpose herein set forth.

2. The arrangement of the holder-abutments P P', in relation to the tenons A B, to effect the sidewise detachment of the shoe from the holder by a limited vertical displacement, substantially as herein set forth.

3. The tenon, having the notch *s* and the cut *o* thereon, as and for the purpose herein set forth.

4. The keying or locking device, composed of the bar D, lug T, wire tab or its equivalent, arranged in the upper abutment, in the manner as and for the purpose specified.

JOHN W. MOFFITT.

Witnesses:

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