Aug. 28, 1923. 1,465,975

E. EMERY

BRAKE SHOE KEY

Filed Sept. 29, 1921

FIG.1.

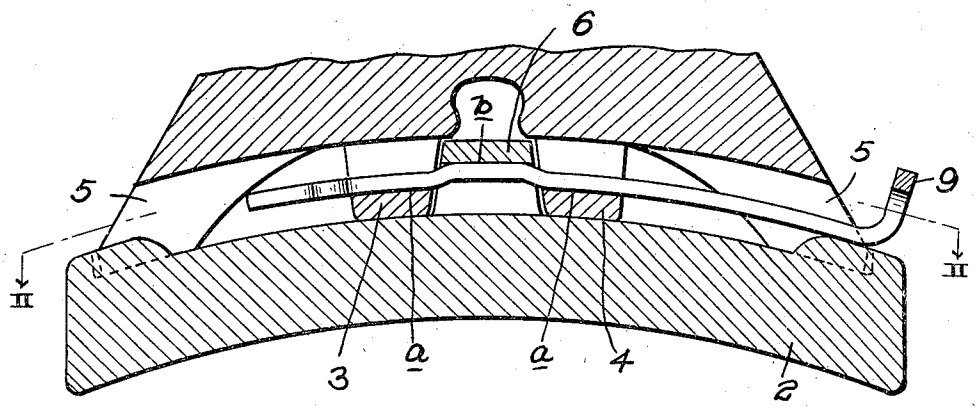


FIG.2.

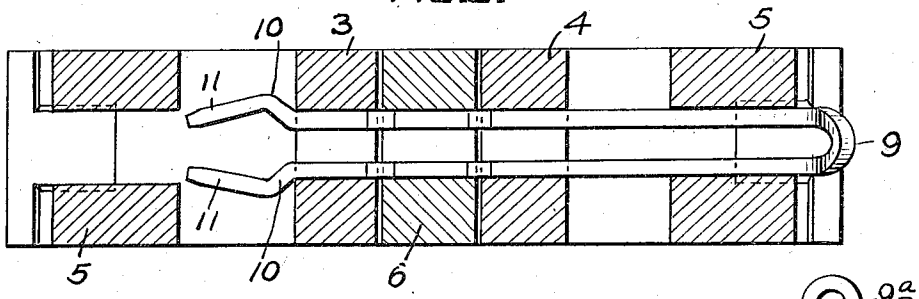


FIG.3.

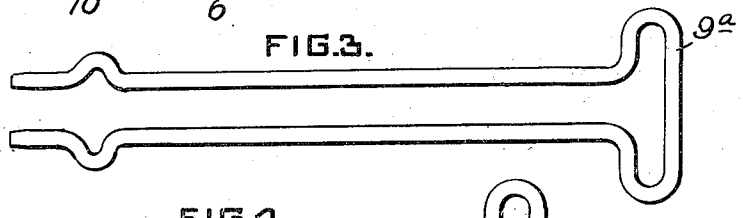


FIG.4.

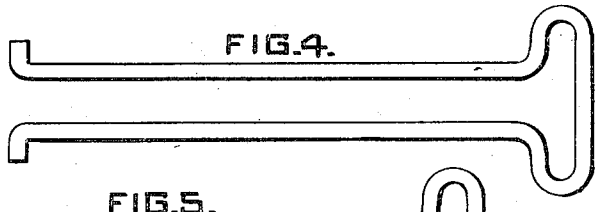
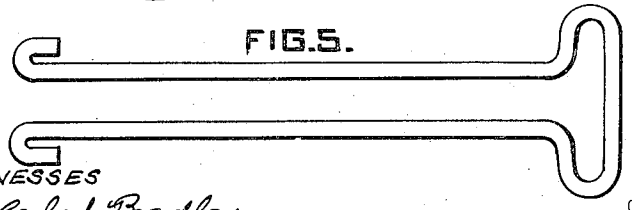


FIG.5.



WITNESSES

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UNITED STATES PATENT OFFICE.

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BRAKE-SHOE KEY.

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To all whom it may concern:

Be it known that I, ERASTUS EMERY, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, a citizen of the United States, have invented or discovered certain new and useful Improvements in Brake-Shoe Keys, of which improvements the following is specification.

In standard constructions the means employed for securing brake shoes to the heads in the beams consists of two spaced lugs on the head and a lug on the back of the shoe adapted to project between the lugs on the head; all of these lugs have openings therethrough for the reception of the locking key. The surfaces of the lugs against which the key bears, are formed on arcs of concentric circles and hence are parallel. The key, however, is made tapering from end to end and hence will have only line bearings on the surfaces of the lugs, and as has been ascertained by practice, is liable to work loose. And further, it is the practice to make the key tapering in width as well as in thickness, and hence as the slots in the lugs on the heads and shoes are made of the same width, opportunity is afforded for the shoes moving laterally on the heads.

The invention described herein has for its object a construction of key which will bear firmly entirely across the bearing faces of the lugs. It is a further object of the invention to provide means whereby the key is locked as against accidental longitudinal movement. The invention is hereinafter more fully described and claimed.

In the accompanying drawings forming a part of this specification, Fig. 1 is a sectional elevation of a brake shoe and brake shoe head secured together in proper relation by the improved key claimed herein; Fig. 2 is a sectional view on a plane indicated by the line II—II, Fig. 1; Figs. 3 and 4 and 5 are views showing different modifications in the construction of the key.

In the practice of the invention the brake shoe head and brake shoe are of standard construction. The head 1 is provided with lugs 3 and 4 having openings therethrough for the passage of the key and adjacent to its upper and lower edges with abutments 5, against which the shoe will bear when in position on the head. The brake shoe 2 is provided with a lug 6 adapted to project when placed in position between the lugs 3 and 4 on the head and has an opening therethrough for the passage of the locking key. In the standard construction the bearing surfaces *a* on the lugs 3 and 4 and the bearing surface *b* on the lug 6, are made on arcs of concentric circles and hence surfaces *a* will be parallel with the surface *b* so that if a key, tapering from end to end as in the present construction, were forced in through these lugs to lock the shoe in position, the key would have only line bearings on the respective lugs. The improved key 7 is formed of a thickness less than the distances between planes coincident with the surfaces *a*, and the surface *b*, and is so bent or offset, as clearly shown at 8 in Fig. 1, that it will bear against the surface *b* for a substantial portion of the length of the surface, while portions on opposite sides of the offset will bear against the surfaces *a* of lugs 3 and 4, and as the key is of uniform thickness throughout its entire length, these portions will bear entirely across the surfaces *a* and *b* when the key is placed in position.

In its preferred form the key is made by bending a strip of metal preferably rectangular in cross section to a hairpin shape, as shown, and when so bent the legs will be approximately parallel and the key will have such transverse dimensions that its legs will bear against the side walls of the openings through the respective lugs. At its upper end the key may be turned over to form a shoulder 9 so as to prevent its dropping down out of position, or the upper end of the strip may be spread out to form a double loop forming shoulders 9^a for the same purpose. At its lower end the legs of the fork are bent outwardly to form shoulders 10, adapted when the key is pushed into position, to spring outwardly under the lugs 3 and thereby prevent any accidental upward movement of the key. Below the shoulders, the legs are bent or drawn inwardly so as to form inclined portions 11 adapted to facilitate the insertion of the key in position. It will be understood that the key is made of steel or other resilient material suitable for the purpose and the shoulders 10 are so proportioned that when the legs are pressed together, as is necessary in inserting the key, the distance between the outer portions of these shoulders will be less than the width of the openings through the lugs. When the legs are pressed together for the insertion, the guiding portions 11 will be substantially narrower at their ends than the

transverse width of the openings through the lugs so that the key can be easily forced into position. It is preferred that the shoulders 10 should be inclined as shown so as to facilitate the withdrawal of the key.

As shown in Fig. 3 the portions of the legs of the key beyond the shoulders 10 may be bent to form shoulders 10^a adapted to bear against the abutments 5 at the lower end of the head, and in that case the portions 11^a of the legs may be made parallel.

The construction shown in Figs. 1 and 2 is preferred but the guiding portions 11 may be omitted and the ends of the legs turned out to form the shoulders 10, as shown in Fig. 4, or such turned out positions may be folded back against the legs as shown in Fig. 5.

I claim herein as my invention:

1. A key for connecting brake shoes to brake shoe heads consisting of spaced parallel legs connected at one end, the width of the key being substantially equal to the width of the slots in the lugs on the shoe and head, portions of the legs intermediate the ends being bent out of line with other portions of the legs, said bent out portion being so constructed as to bear on the lug on the shoe for a substantial portion of the length of the lug.

2. A key for connecting brake shoes to brake shoe heads consisting of spaced parallel legs connected at one end, the width of the key being substantially equal to the width of the slots in the lugs on the shoe and head, portions of the legs intermediate the ends being bent out of line with other portions of the legs, said bent out portions being adapted to bear on the lug on the shoe for a substantial portion of the length of the lug, the key provided with shoulders at both ends adapted to engage portions of the brake-shoe head to hold the key in position.

3. A key for connecting brake-shoes to brake-shoe heads, consisting of spaced parallel legs connected at one end, the width of the key being substantially equal to the width of the slots in the lugs on the shoes and heads, portions of the legs intermediate the ends being bent out of line with other portions of the legs, said bent out portions being adapted to bear on the lug on the shoe, the legs being bent outwardly adapted at both ends to form shoulders, said shoulders being approximately in the plane of the legs and lying approximately in the plane of the legs adapted to engage portions of the head.

4. A key for connecting brake-shoes to brake-shoe heads, consisting of spaced parallel legs connected at one end, the width of the key being substantially equal to the widths of the slots in the lugs on the shoes and heads, portions of the legs intermediate the ends being bent out of line with other portions of the legs, said bent out portions being constructed to bear on the lug of the shoe for a substantial portion of the length of the lug, the ends being bent outwardly adjacent to their ends to form shoulders lying approximately in the plane of the legs adapted to engage portions of the head and having the portions beyond the shoulders bent inwardly to guide the key when being inserted to holding position.

5. A key for connecting brake-shoes to brake-shoe heads consisting of spaced parallel legs connected at one end, the width of the key being equal to the widths of the slots in the lugs on the shoe and head, the connection between the legs being extended beyond the legs to form shoulders and the legs being provided with shoulders adjacent to their free ends, said shoulders being approximately in the plane of the shoulders at the opposite ends of the legs.

In testimony whereof, I have hereunto set my hand.

ERASTUS EMERY.