

J. J. KINZER.
 BRAKE SHOE.
 APPLICATION FILED FEB. 27, 1911.

1,024,265.

Patented Apr. 23, 1912.

FIG. 1.

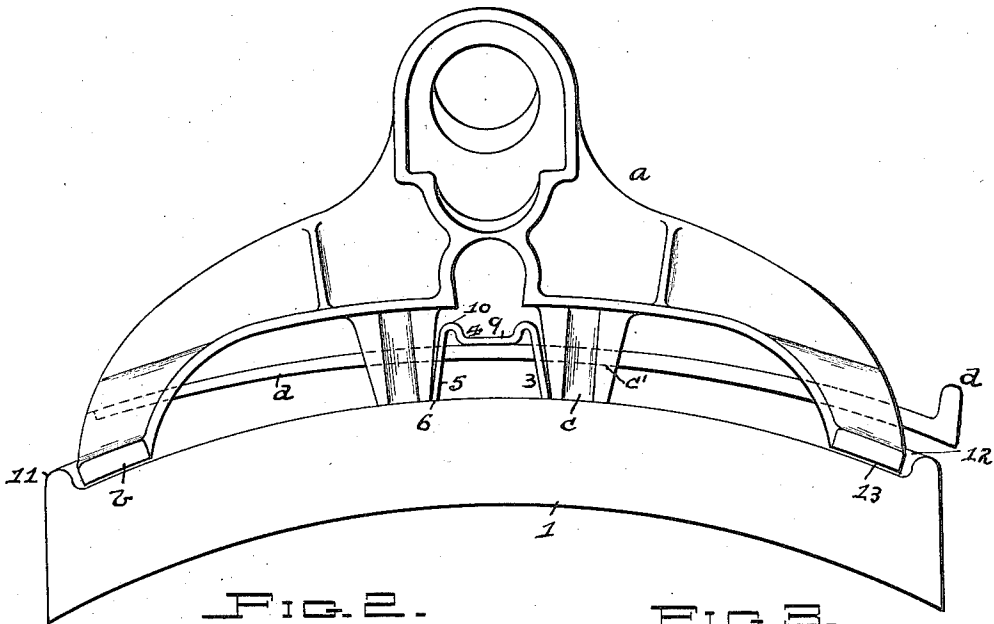


FIG. 2.

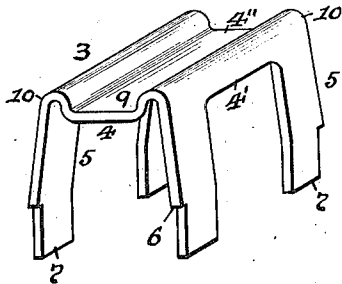


FIG. 3.

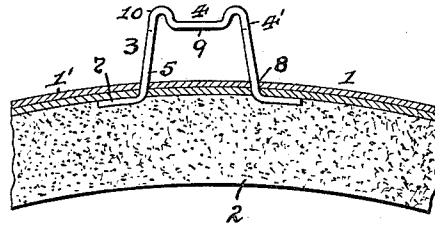
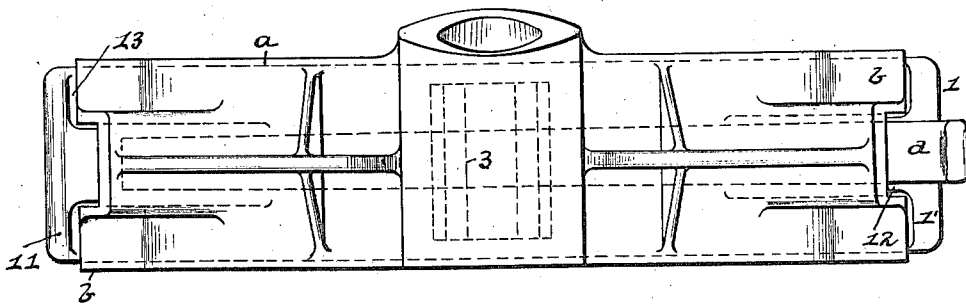


FIG. 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN J. KINZER, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO PITTSBURGH BRAKE SHOE COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

BRAKE-SHOE.

1,024,265.

Specification of Letters Patent.

Patented Apr. 23, 1912.

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To all whom it may concern:

Be it known that I, JOHN J. KINZER, a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Brake-Shoes; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to brake-shoes, and has special reference to the means for connecting the shoe to the head or hanger.

The object of my invention is to provide a cheap, simple and efficient form of a brake-shoe in which the connecting lug for supporting the shoe on the head or hanger will be formed separate from the back of the shoe, will be sufficiently ductile for the driving of the locking key to place, and will provide for the proper grip or hold on such key when in place.

To these ends my invention consists, generally stated, in the novel arrangement, construction and combination of parts, as hereinafter more specifically set forth and particularly pointed out in the claims.

To enable others skilled in the art to which my invention appertains to construct and use my improved brake-shoe, I will describe the same more fully, referring to the accompanying drawing, in which—

Figure 1 is a side elevation of my improved brake-shoe showing the head or hanger connected thereto. Fig. 2 is an enlarged perspective view of the lug employed. Fig. 3 is a longitudinal section of a portion of the shoe. Fig. 4 is a back view of the shoe.

Like symbols of reference herein indicate like parts in each of the figures of the drawing.

As illustrated in the drawing, my improved brake-shoe comprises an inclosing casing 1 and a filling 2 inserted therein, which casing is preferably made of sheet or plate metal having a substantial degree of strength and ductility, such as steel, and it is formed, preferably by pressing or bending in suitable dies into a structure having integral back, side and end walls, as well as being open at its front and curved substantially in accordance with the periphery of the car-wheel.

A supporting lug 3, through which the brake-shoe is connected to the brake-head or hanger *a*, as hereinafter described, is

fixed to the back 1' of the casing 1, which lug is formed from sheet or plate metal, such as steel, and sufficiently soft to provide for its being ductile, as well as maintaining the strength required in the same. This lug 3 is preferably bent or pressed to hollow or inverted trough shape in suitable dies, from a strip of sheet metal and at a right angle to its length, which provides such lug with open ends, to form the body portion 4 and supporting legs or standards 5, which legs are inclined so as to extend out from the side portions 4' on said body portion. The legs 5 on the lug 3 are cut away on their outer side edges to form the shoulder 6, with the inner ends 7 beyond the same, so that such ends can be passed through slots 8 in the back wall 1' of the casing 1 and turned over thereon and against said wall, while such lug will be supported on said casing by said turned ends and by the shoulders 6 resting against said back wall.

The body portion 4 of the lug 3 is dished or bent inwardly along its top portion 4'' and from the open ends of said lug to form the spring bearing portion 9 centrally of the same, which acts as a bearing face and connects with the rounded raised portions 10 at each side of the same and with the side portions 4' and legs 5.

In the use of my improved brake-shoe the back wall 1' of the casing 1 is provided with a lip 11 extending along each end wall of the casing and having a central raised portion 12 in said back wall extending inwardly from said lips and adapted to form bearing surfaces 13 on each side of said raised portion and by the same and said lips, so that when the brake-head or hanger *a* of the ordinary approved type is placed against said back the two bearings *b* on the ends of such hanger will abut against said surfaces, while the intermediate bearings *c* on said hanger will fit on either side of the lug 3 and abut against the said back. When the brake-head or hanger *a* is thus set in position on the back 1' of the casing 1, the usual key *d* connects the shoe and hanger together by being passed between the bearings *b* on each end of such hanger, under the central spring bearing 9 on the lug 3, and between the legs 5 on said lug and intermediate bearings *c* on said hanger, so that said key will thus bear against the spring bearing 9 on said lug and against

the cross bearing *c'* between each of the bearings *c* on the said hanger.

The rubbing or frictional action of the brake-shoe upon the wheel is exerted by the frictional member, which consists of the filling 2 of any suitable material, such as cast iron or other metal or composition of matter specially prepared for the purpose, and of such character as to exert proper and sufficient friction upon the periphery of the wheel without the imposition of undue or excessive pressure thereon, which compositions are of a character familiar to those skilled in the art. The filling 2 can be either cast into the casing 1 when set in a mold or inserted in the casing under pressure and retained in position after hardening by the walls of such casing.

It will thus be seen that my improved brake-shoe will have its lug for supporting the brake-head or hanger held to the casing of the shoe in a rigid manner and will not be liable to be broken off or get out of shape by any sudden blow or jar upon the shoe or head and thereby prevent the shoe from falling with great danger of derailment to the train. In cases of solid cast lugs and lugs which are cast with the shoe and provided with a strip of steel in and between the same for reinforcement, the former are liable to break and there is great danger of such strips or reinforcement in the latter case crystallizing by being embedded in the molten metal for forming the shoe, which will render such lug not only useless, but dangerous when the shoe is used on heavy trains. It will also be seen that by my improved brake-shoe the usual rigidity in the hanger supporting lug on the shoe is overcome and the lug employed will provide for a certain amount of softness and ductility therein to enable it to conform at all times to the bearing of the key upon the same when such key is in position between the hanger and shoe, and yet enable sufficient strength in the lug for the purpose for which it is being used, while such lug will also permit the use of a light material in forming the same, which will thereby render it capable of being bent or pressed into shape without the use of heat and thus overcoming the danger of crystallization, as well as enabling it to be bent by the bearing of the key and thus overcome all liability of it breaking or becoming distorted to the detriment of injuring or breaking the same, the shoe or the hanger. It will further be seen that my improved brake-shoe will enable the lug to give to the extent desired when the locking key is driven to place against the same by reason of the softness or ductility of said lug, and in case of any wear occurring between the brake-head or hanger and the shoe such lug will have suffi-

cient resiliency so as to retain its hold upon the key, and thus prevent the key from becoming loose and jumping or working out, which would unlock the shoe from the hanger and allow the shoe and key to fall down onto the road-bed or rail.

What I claim as my invention and desire to secure by Letters Patent is—

1. In combination with a hanger and its connecting key, of a brake shoe having a lug of sheet metal fixed to the back of said shoe for being connected to said hanger by said key to support said shoe, said lug being provided with open ends, and an inwardly extending spring bearing on said lug for being adapted to engage with and conform to said key.

2. In combination with a hanger and its connecting key, of a brake shoe having a lug of sheet metal fixed to the back of said shoe for being connected to said hanger by said key to support said shoe, said lug being provided with open ends, legs on the sides of said lug and around said key for engaging with and extending out from said back, and an inwardly extending spring bearing on said lug for being adapted to engage with and conform to said key.

3. In combination with a hanger and its connecting key, of a brake shoe having a lug of sheet metal fixed to the back of said shoe for being connected to said hanger by said key to support said shoe, said lug being provided with open ends, inclined legs on the sides of said lug and around said key for engaging with and extending out from said shoe back, and an inwardly extending spring bearing on said lug for being adapted to engage with and conform to said key.

4. In combination with a hanger and its connecting key, of a brake shoe having a lug of sheet metal fixed to the back of said shoe for being connected to said hanger by said key to support said shoe, said lug being provided with open ends, legs on the sides of said lug and around said key for engaging with and extending out from said back, said legs being adapted to be passed through slots in said back and turned against the same, and an inwardly extending spring bearing on said lug for being adapted to engage with and conform to said key.

5. In combination with a hanger and its connecting key, of a brake shoe having a lug of sheet metal fixed to the back of said shoe for being connected to said hanger by said key to support said shoe, said lug being provided with open ends, inclined legs on the sides of said lug and around said key for engaging with and extending out from said shoe back, said legs being adapted to be passed through slots in said back and turned against the same, and an inwardly extending spring bearing on said lug for being

adapted to engage with and conform to said key.

6. In combination with a hanger and its connecting key, of a brake shoe having a lug of sheet metal fixed to the back of said shoe for being connected to said hanger by said key to support said shoe, said lug being provided with open ends, and an inwardly projecting spring bearing on the top portion of said lug extending from and between said ends for being adapted to engage with and conform to said key.

7. In combination with a hanger and its connecting key, of a brake shoe having a lug of sheet metal fixed to the back of said shoe for being connected to said hanger by said key to support said shoe, said lug being provided with open ends, legs on the sides of said lugs and around said key for engaging with and extending out from said back, and an inwardly projecting spring bearing on the top portion of said lug extending from and between said ends for being adapted to engage with and conform to said key.

8. In combination with a hanger and its connecting key, of a brake shoe having a lug of sheet metal fixed to the back of said shoe for being connected to said hanger by said key to support said shoe, said lug being provided with open ends, inclined legs on the sides of said lug and around said key for engaging with and extending out from said back, and an inwardly projecting spring bearing on the top portion of said lug extending from and between said ends for being adapted to engage with and conform to said key.

9. In combination with a hanger and its connecting key, of a brake shoe having a lug of sheet metal fixed to the back of said shoe for being connected to said hanger by said key to support said shoe, said lug being provided with open ends, legs on the sides of said lug and around said key for engaging with and extending out from said back, said legs being adapted to be passed through slots in said back and turned against the same, and an inwardly projecting spring bearing on the top portion of said lug extending from and between said ends for being adapted to engage with and conform to said key.

10. In combination with a hanger and its

connecting key, of a brake shoe having a lug of sheet metal fixed to the back of said shoe for being connected to said hanger by said key to support said shoe, said lug being provided with open ends, inclined legs on the sides of said lug and around said key for engaging with and extending out from said back, said legs being adapted to be passed through slots in said back and turned against the same, and an inwardly projecting spring bearing on the top portion of said lug extending from and between said ends for being adapted to engage with and conform to said key.

11. In combination with a hanger and its connecting key, of a brake shoe having a lug of sheet metal fixed to the back of said shoe for being connected to said hanger by said key to support said shoe, said lug being provided with open ends, legs on the sides of said lug and around said key for engaging with and extending out from said back, said legs being adapted to be passed through slots in said back and turned against the same, a shoulder on said legs for resting against said back to fix said lug to said back, and an inwardly projecting spring bearing on the top portion of said lug extending from and between said ends for being adapted to engage with and conform to said key.

12. In combination with a hanger and its connecting key, of a brake shoe having a lug of sheet metal fixed to the back of said shoe for being connected to said hanger by said key to support said shoe, said lug being provided with open ends, inclined legs on the sides of said lug and around said key for engaging with and extending out from said back, said legs being adapted to be passed through slots in said back and turned against the same, a shoulder on said legs for resting against said back to fix said lug to said back, and an inwardly projecting spring bearing on the top portion of said lug extending from and between said ends for being adapted to engage with and conform to said key.

In testimony whereof, I, the said JOHN J. KINZER, have hereunto set my hand.

JOHN J. KINZER.

Witnesses:

T. B. HUMPHRIES,
J. N. COOKE.