Sept. 20, 1932. J. SNEED 1,878,197

ANTIRATTLER

Filed April 13, 1928

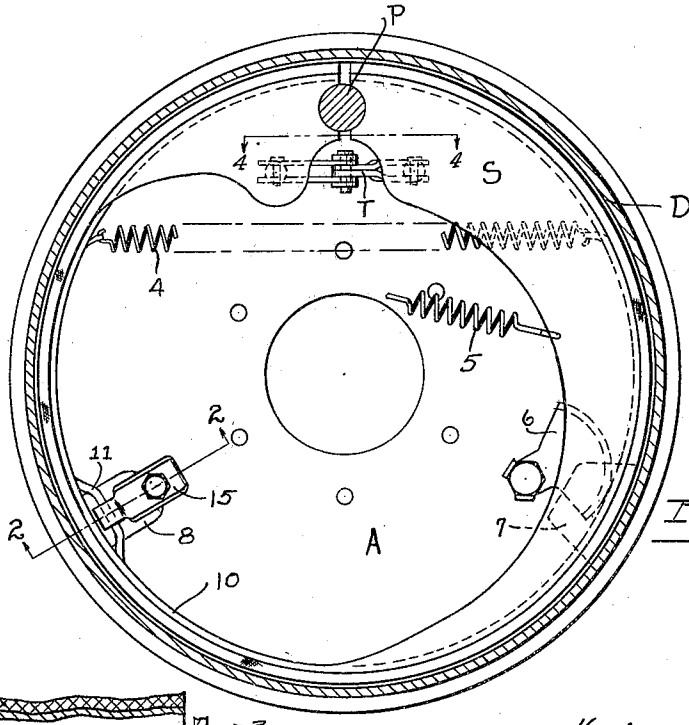


FIG 1

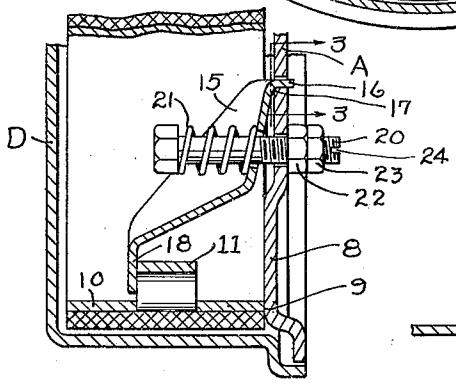


FIG 2

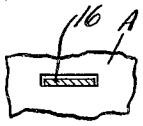


FIG 3

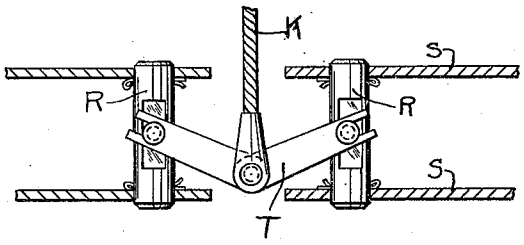


FIG 4

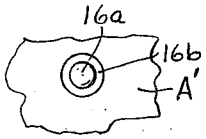


FIG 6

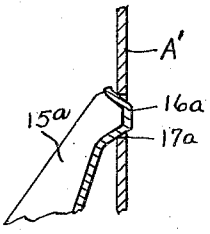


FIG 5

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Patented Sept. 20, 1932

1,878,197

UNITED STATES PATENT OFFICE

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ANTI-RATTLER

Application filed April 13, 1928, Serial No. 269,677, and in Great Britain February 6, 1928.

This invention relates to brakes for motor vehicles and more particularly to a device and an arrangement which prevents rattling.

This application is a continuation as to all divisible subject matter of my co-pending application, Serial No. 261,760, filed March 15, 1928.

In brakes particularly of the type where a "full floating" annular shoe is used, there may be a tendency for the part of the shoe remote from its anchor from shaking laterally when the vehicle is in motion. Various arrangements of springs and clamps have been used to prevent or restrict such motion, but it is among the objects of my invention to provide a device which is simple, cheap, easily manufactured, adjustable and quickly assembled. Another object of the invention is to arrange a device cooperable with a shoe or part of a shoe formed as a flat curved band. Other objects will appear from the following detailed description of the embodiment of my invention illustrated herewith. The essential characteristics are summarized in the claims.

In the drawing, Fig. 1 illustrates an assembly of the brake shoe on the brake apron; Fig. 2 is a section taken along the lines 2—2 of Fig. 1; Fig. 3 is a section taken along the line 3—3 of Fig. 2; Fig. 4 is a section taken along the line 4—4 of Fig. 1; and Figs. 5 and 6 illustrate modifications of the structures shown in Figs. 2 and 3 respectively.

In the drawing, I illustrate a well known type of brake mechanism wherein I show a brake apron or back plate A adapted to be carried by an axle or steering knuckle of a motor vehicle. A brake drum D is shown, which in usual practice is carried by the vehicle wheel. Secured to the apron A is an anchor P, against which the ends of the brake shoe S abut.

Referring also to Fig. 4 I provide shoe spreading mechanism such as a toggle T actuable through a cable K and engaging the ends of the shoe through pins R. Suitable retractor springs 4 and 5 maintain the shoe in idle position. An adjustable retraction stop member 6 is secured to the back plate and limits the inward movement of the right half of the shoe, as viewed in Fig. 1. The apron may be indented as at 7 adjacent the stop member. The spring 5 extends from the apron to a portion of the shoe S spaced from the apron and to that extent tends to draw that portion of the shoe against the indented portion 7.

The right half of the shoe as viewed in Fig. 1, may be formed in channel cross-section or may have suitable reinforcing ribs, but generally speaking the left half of the shoe comprises a flat curved lining supporting part 10 without the reinforcement. There is formed about mid-way between the anchor and the stop member a raised portion 8 on the apron (see also Fig. 2) against which the edge of the shoe abuts as at 9. Near this point in the flat curved portion 10 of the shoe adjacent the raised portion of the apron 8 there is pressed inwardly a strip 11 of the middle of the shoe. Lateral movement between the shoe and the apron is eliminated by resiliently engaging the strip 11 and urging the edge of the shoe into engagement with the indenture 8 of the apron.

To accomplish this, I provide a member 15 partly channeled in section and having a tip 16 (see also Fig. 3) which extends freely through an aperture in the apron and may swing within limits circumferentially and also swing toward or away from the apron about a point contact 17 on the lower inner edge of the aperture. The lower end of the member 15 engages the outer side of the strip or piece 11 as at 18. Extending through the member 15 is a bolt 20 which carries a spring 21 between its head and the body of the member 15. The bolt 21 extends through the apron and has a nut 22 and lock nut 23 for drawing the head of the bolt toward the apron. The end of the bolt may be slotted as at 24 to facilitate adjustment. Holes are provided in the member 15 and the apron which leave ample clearance for the bolt. It will appear as the head of the bolt is drawn toward the apron, the spring 21 is compressed so that a lateral pressure is exerted on the strip or piece 11 to force the edge of the shoe into engagement with the indenture 8 of the

apron regardless of the radial or circumferential movement of the shoe.

Referring to Figs. 5 and 6, I show a modification which consists in forming the tip of the member 15*a* as circular projection 16*a*, the outer surface of which is conical. The projection 16*a* extends into a circular hole 16*b* in the apron A'. Thus the member 15*a* contacts with the apron over a substantial circular area 17*a* so that the member 15*a* is permitted to rotate slightly and relative to the apron, more readily following the shoe in its circumferential movement. This modification has the advantage of closing the aperture in the apron and thereby excluding foreign matter from the interior of the brake drum.

While the foregoing describes a preferred embodiment of my invention, I do not care to be limited in the scope thereof other than by the claims appended hereto.

I claim:—

1. In a brake, an apron, a brake shoe disposed adjacent thereto, said apron having an indenture formed therein engageable with the edge of the brake shoe and having an aperture adjacent said indenture and disposed radially inward therefrom, a member having a portion extending through said aperture and extending radially outward from said aperture to said brake shoe and engaging said shoe, and means for urging said member toward said apron to hold the edge of the shoe against said apron.

2. An apron, a brake shoe disposed adjacent thereto, said apron having an indenture formed therein engageable with the edge of the brake shoe and having a pair of apertures adjacent said indenture and disposed radially inward therefrom, a member having an aperture and having a portion extending through one of said apertures in the apron and extending radially outward from said aperture to said brake shoe engaging said shoe, and means for urging said member toward said apron to hold the edge of the shoe against said apron comprising a bolt freely passing through the aperture in the member and the other of the apertures in the apron and a spring drawn by the bolt against said member.

3. In a brake having an apron with an indenture and a circular aperture adjacent thereto, a shoe having an inwardly extending part and an anti-rattling device having at one end a conical projection extending into said aperture, said member having its other end engaging the inwardly extending part of the shoe, and resilient means for urging said member toward said apron whereby the edge of the shoe is held in contact with said indenture.

4. In a brake having an apertured apron and a shoe, an anti-rattling device constituting a member with one end extending through the aperture in the apron, said member being disposed to extend radially from said aperture to said shoe with its other end engaging said shoe at a point spaced from the apron, a bolt extending through the apron and through said member lying generally normal to the apron, and a spring carried by said bolt and engaging said member.

5. An anti-rattling device for brakes comprising a member having one end pivotally supported on a fixed part of the brake and having its other end in sliding engagement with the brake shoe and a coil spring engaging said member and urging it toward the supporting part and forcing the edge of the shoe into contact with the said fixed part.

6. In a brake, an apron having a slot therein, a shoe having an inwardly extending part, and an anti-rattling device associated with said apron and shoe and having at one end a tongue extending into said slot, and having its opposite end engaging the inwardly extending part of the shoe, and resilient means for urging said member toward said apron.

7. A brake comprising, in combination, an annular brake shoe having a lining supporting flange and a radial flange of gradually decreasing depth extending through at least one half the circumference of the shoe and terminating gradually, and a strip pressed inwardly from the lining supporting part and means for engaging said strip to prevent rattling.

8. In a brake, a brake shoe comprising at least in part a flat curved lining supporting portion having an integral radial rib extending at least throughout half the circumference thereof, a strip pressed inwardly from the lining supporting portion, said strip being pressed inwardly in that portion of the shoe opposite the reinforced portion, said strip being adapted to be laterally engaged by an anti-rattling device.

9. In a brake, the combination of a brake drum having an apron, an anchor supported by said apron, a brake shoe having separable ends abutting against said anchor, means for drawing said ends against said anchor, said brake shoe comprising a lining supporting surface and a radial flange, said radial flange extending through at least one-half of said lining supporting surface whereby varying degrees of flexibility and rigidity are imparted to various sectors of said shoe, and a strip extending inwardly from the lining supporting portion in that section of the shoe devoid of a radial rib, and an anti-rattling device cooperating with said strip to prevent rattling of said shoe.

In testimony whereof, I hereunto affix my signature.

JOHN SNEED.