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BRAKE DRUM COOLING AND SILENCING DEVICE

Filed Sept. 13, 1946

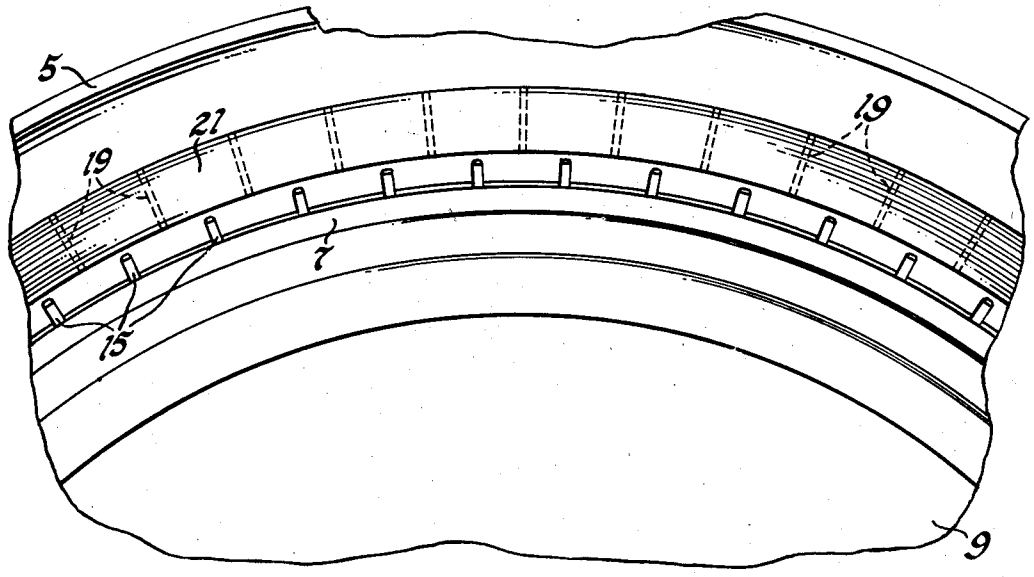


Fig. 1

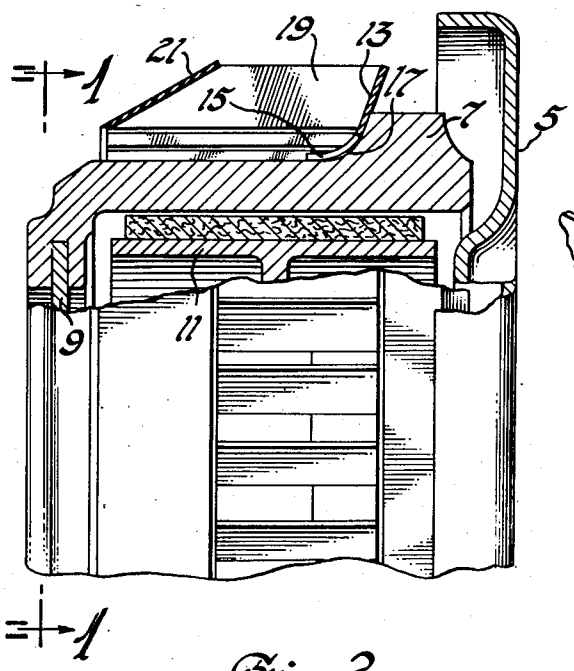


Fig. 2

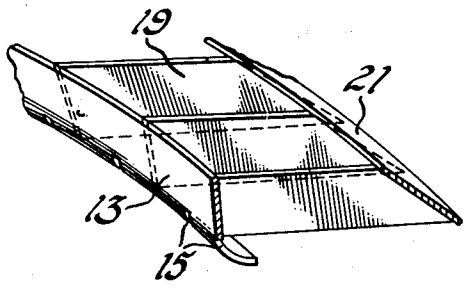


Fig. 3

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BRAKE DRUM COOLING AND SILENCING DEVICE

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6 Claims. (Cl. 188—218)

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This invention relates to brakes and more particularly to cooling means for use with brake drums of vehicles.

An object of the invention is to provide a sort of fan to be mounted on the drum, the fan causing an air circulation which is to cool the drum. Other objects include the attainment of the major objective by a construction which is inexpensive to manufacture and assemble.

On the accompanying drawing, Fig. 1 is a view of a portion of a brake drum in elevation as seen from line 1—1 of Fig. 2. Fig. 2 is a transverse section through the drum.

Fig. 3 is a perspective of a part of the fan.

Referring to the drawing by reference characters there is shown at 5 a fixed backing plate. This plate overlaps the edge of the drum 7 at its open end. The other end of the drum has secured thereto an attaching plate 9. The drum may be of cast iron and be secured to plate 9 when being cast. Plate 9 is to be secured to the wheel in any usual way. The wheel and the bolts by which the plate 9 is secured are not illustrated for the reason that they form no part of the invention.

Also not shown are the provisions for anchoring the shoes, indicated by numeral 11, nor is there shown the wheel cylinder or other expanding means by which the shoes are made to frictionally engage the drum.

It is well known that the heat developed by the frictional engagement of the shoes with the drum is frequently excessive and various arrangements have been suggested to radiate this heat. In accordance with my invention I plan to create a flow of air over and away from the drum surface, which will aid in carrying off the excessive heat. To that end I mount on the drum what may be called a cooling fan of the sirocco type. It includes an annular strip of sheet metal 13. The strip is angular in cross section with diverging parts. When assembled on the drum its lower part, preferably slotted as shown at 15, fits snugly on the outer surface of the drum and against the flange 17 as shown in Figure 2. The slots 15 increase the resilience of the lower curved part of strip 13. Thus the fan can be assembled on the drum with a snug fit regardless of small variations in drum and fan size, and the fan is provided with a resilient mounting.

Secured to the strip 13 are a series of vanes 19.

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These vanes extend across the drum surface but are out of contact therewith. Another annular strip 21 forming a conical surface is supported by being united with the other ends of the vanes. There is thus provided an annular space between the outer surface of the drum and the innermost edges of the vanes. Air is free to flow into this annular space from which it passes through the spaces between the vanes under the influence of the suction created by the vanes of the fan. The parts are inexpensive and so also is the assembly on the drum. The air current effected by the fan as the drum rotates will serve to cool the drum by carrying away the heat caused by the friction with the shoes.

Since the fan is resiliently mounted on the drum, the fan will act as a silencer or damper of brake drum vibrations. Vibration of the drum during operation of the brakes often causes objectionable noise. The fan considered as a mass will not vibrate in phase with the brake drum due to the resilient mounting. This out of phase vibration of the fan will produce a vibration damping or silencing effect on the brake drum.

I claim:

1. A brake drum having at one end thereof a radially projecting flange, a fan comprising a first part fitted snugly against the drum surface and its flange, a second annular part spaced from the drum surface and adjacent the opposite end of the drum and a plurality of vanes supported by the first part and supporting the second part.

2. The invention defined by claim 1, the outer portion of the annular parts angularly related to each other and to the radius of the drum.

3. The invention defined by claim 1, said first part having slots to facilitate a snug assembly on the drum.

4. A brake drum, an annular element, resilient spring tongues attached to and extending inwardly from said annular element and engaging said brake drum to provide a vibration damper and a fan attached to said annular element.

5. A brake drum having a cylindrical surface with a radialy projecting flange at one end, a fan, resilient spring means connected to the fan and resiliently clamping the cylindrical surface of said drum and resiliently holding said fan in contact with said flange to provide a vibration damper.

6. A brake drum, a fan, resilient spring means

connected to said fan and resiliently engaging and clamping said drum to provide a combined vibration damper and drum cooling fan.

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