This invention relates to a hydraulic brake cylinder cleaner and polisher. In service a brake cylinder accumulates a filament of rust and muck and the methods used at present to remove the filament consists in the use of a carborundum stone which removes material from the cylinder which, in nine cases out of ten should not be removed. With this in mind the present invention provides a cleaner and polisher of such construction that the operator can choose to either clean the cylinder, or if necessary, he can apply an abrasive to the cleaner blades and remove as much material as is necessary.

A further object is to provide a cleaner in which the blades are formed of fiber, a material that will not damage the walls of the cylinder, but furnishes, optionally, a means of applying an abrasive to the wall of the cylinder to be reconditioned.

A further object is to provide a device of this character in which the blades of the cleaner and polisher are mounted on leaf springs, which exert an even tension on the walls of the cylinder when the cleaner and polisher is rotated axially in the cylinder.

A further object is to provide a cleaner and polisher in which the leaf springs are cast as a unit with hubs on both ends of the cleaner and polisher to reduce the cost of manufacture.

A further object is to provide apparatus of this character which will be formed of a few strong, simple and durable parts, which will be inexpensive to manufacture, and which will not easily get out of order.

With the above and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter fully described and claimed, it being understood that various modifications may be resorted to within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawing forming a part of this specification:

Figure 1 is a side elevation of a cleaner and polisher constructed in accordance with the invention.

Figure 2 is a longitudinal sectional view of the cleaner and polisher.

Figure 3 is a cross sectional view of the cleaner and polisher taken on the line 3—3 of Figure 1.

Referring now to the drawing in which like characters of reference designate similar parts in the various views, 10 designates a cylindrical shank formed at one end 11 to be received in the chuck of an electric, or other drill.

A plurality of blades 12, formed of strips of fiber are disposed longitudinally of the shank 10 and are riveted as shown at 13, or otherwise secured intermediate their ends to the intermediate portions of bowed leaf springs 14, there being preferably four blades, see Figure 3, secured to four respective leaf springs.

The ends of the leaf springs are cast integral with the hubs 15 and 16, the hub 16 being screw threaded engaged with the end of the shank as shown at 17 and being locked thereon by a lock nut 18 and a washer 19.

A helical spring 20 is sleeved on the shank between the hub 15 and a cap nut 21 which is threaded engaged with the shank as shown at 22. By adjusting the cap nut 22 longitudinally of the shank the pressure of the leaf spring 20 against the hub 15 will be regulated to control the curvature of the leaf springs 14 and thus bring the blades 12 closer together, or move the blades far apart, to adjust the blades to engage the wall of a hydraulic brake cylinder.

The blades are provided on their outer surfaces with parallel grooves 23 disposed obliquely to the shank 10.

In operation the cleaner and polisher is rotated axially in the cylinder preferably by an electric drill. The cylinder is flushed with alcohol, preferably, while the cleaner and polisher is being rotated in the cylinder. After cleaning the cylinder an inspection is made and if the cylinder is rough or pitted after the cleaning operation, a small amount of valve grinding compound, or other abrasive, is applied to the blades of the cleaner and polisher and the first operation is repeated. As the blades 12 are connected intermediate their ends to the intermediate portions of the bowed springs 14, the end portions of the blades are spaced from and free of connection with the springs. This permits the blades to float in the cylinder being cleaned or polished.

The floating of the blades enables the operator to maintain the tool in alignment with the cylinder regardless of the manner in which he holds the tool-turning motor with respect to the axis of the cylinder. Also, the floating of the blades enables the tool to be used efficiently in connection with cylinders varying widely in size.

The outer longitudinal corners of the blades are beveled, and the grooves 23 in the faces of the blades are inclined and open at their ends through the beveled corners of the blades, whereby to adapt the blades to remove the film of rust and
muck from the cylinder wall and carry it to the open end of the cylinder. As the ends of the springs 14 are embedded in and formed integrally with the hubs 15 and 16, a simple, strong and durable connection is established between the springs and hubs without the aid of any part or parts likely to become loose while the tool is in use.

In lieu of the blades being formed of fibre strips the plates may be formed of a suitable grade of rubber material impregnated with an abrasive.

From the above description it is thought that the construction and operation of the invention will be fully understood without further explanation.

What is claimed is:

1. A brake cylinder cleaner and polisher comprising a shank, hubs mounted on the shank, outwardly bowed leaf springs fixed at their ends to the hubs, and blades fixed to the springs, the blades having beveled outer longitudinal corners, and the blades being provided in their outer faces with grooves having their ends opening through said beveled corners.

2. A brake cylinder cleaner and polisher comprising a one-piece shank, a front hub mounted on the shank for rotation thereby, a rear hub loosely mounted on the shank, outwardly bowed leaf springs surrounding the shank between the hubs and having their ends fixed rigidly to the hubs, a coil spring sleeved on the shank bearing against the rear side of the rear hub, means for varying the tension of the coil spring to regulate the curvature of the leaf springs, blades having their intermediate portions arranged in contact with the outer sides of the intermediate portions of the leaf springs, the blades extending longitudinally of the leaf springs with their ends free of engagement with the springs and hubs, and means engaging the intermediate portions of the blades and leaf springs establishing a rigid connection between said blade and spring portions.

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