May 10, 1932. W. H. ROSS 1,857,873

BRAKE DRUM TRUING DEVICE

Filed Feb. 12, 1930

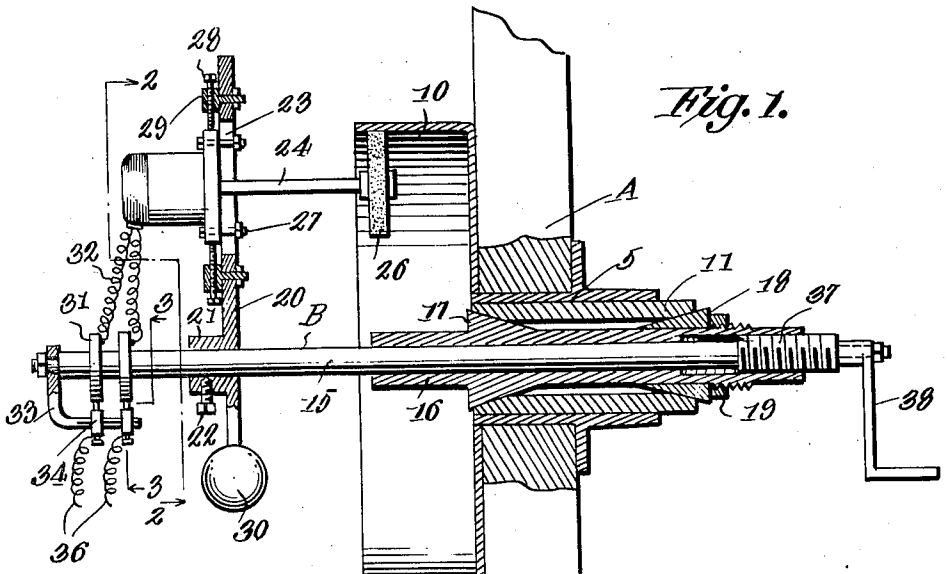


Fig. 1.

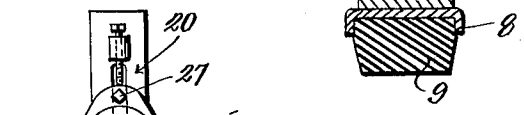


Fig. 2.

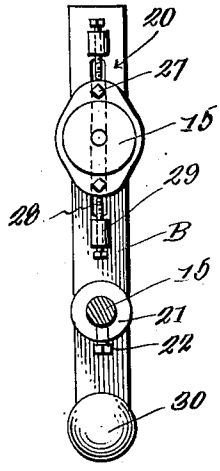
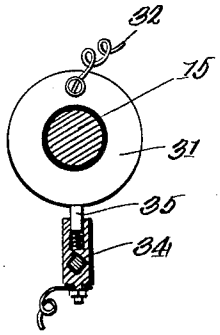


Fig. 3.



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UNITED STATES PATENT OFFICE

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BRAKE DRUM TRUING DEVICE

Application filed February 12, 1930. Serial No. 427,930.

This invention appertains to a novel device for truing the brake drums of automotive vehicles both internally and externally and particularly to a device of this character for operating on the brake drums of heavy truck wheels.

One of the primary objects of my invention is the provision of novel means for associating the truing device with the wheel, whereby the wheel can be held stationary on the ground and the truing device rotated in the usual wheel bearing for bringing about the effective truing of the brake drums.

A further object of my invention is the provision of novel means for feeding the supporting shaft carrying the truing tool axially of the wheel bearing whereby the tool can be effectively fed across or transversely of the brake drum.

A further object of my invention is the provision of an arm carrying the driving motor for the truing or grinding wheel for the drum, the arm being initially adjustable on the supporting shaft whereby the truing wheel can be initially adjusted relative to the drum to be trued.

A further object of my invention is the provision of novel means for mounting the motor for operating the truing wheel on the arm, whereby the motor can be initially adjusted to brake drums of different diameters.

Another important object of my invention is the provision of means for conducting the electricity to the motor carried by the rotating arm and shaft during the rotation of said shaft, said means embodying a stationary bracket arm carrying brushes engaging collector rings for the motor rotatable with the shaft.

A still further object of my invention is to provide an improved brake drum truing device of the above character, which will be durable and efficient in use, one that will be simple and easy to manufacture, and one which can be placed upon the market at a reasonable cost.

With these and other objects in view, the invention consists in the novel construction, arrangement and formation of parts as will be hereinafter more specifically described, claimed, and illustrated in the accompanying drawings, in which drawings:—

Figure 1 is a side elevation of my improved truing device with parts thereof broken away and in section and showing the device in operative position on a wheel for truing the drum thereof, parts of the wheel being shown broken away and in section.

Figure 2 is a detail section through my device taken on the line 2—2 of Figure 1 looking in the direction of the arrows illustrating the supporting arm carrying the operating motor, and

Figure 3 is a detail section taken on the lines 3—3 of Figure 1 looking in the direction of the arrows illustrating one of the brushes and collector rings for conducting the current to the motor.

Referring to the drawings in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter A generally indicates a motor vehicle wheel and B my improved device.

The wheel A can be of any preferred or conventional construction and as shown in the present illustration is a wheel of the type generally employed in heavy trucks and the same embodies the hub 5, the radially extending spokes 6 and the felly 7. The felly 7 carries the rim 8 for a tire 9. Secure to the wheel A is the brake drum 10 of any conventional character. The hub 5 of the wheel can likewise be of any preferred or conventional construction for receiving different types of shafts and shaft bearings and in the present instance I have shown the hub 5 provided with a bearing sleeve 11 for receiving an axle (not shown). My improved device B may comprise a rotatable shaft 15 on which is fitted for rotation therewith a spindle 16 having formed integral therewith a bearing and clamping cone 17. The end of the spindle 16 from the cone 17 receives an adjustable cone 18 and in use of my improved device the adjustable cone 18 is removed from the spindle 16 and the spindle is inserted through the bearings 11 of the hub 5 of the wheel A until the cone 17 engages the bearing, after which the cone 18 is oppositely disposed relative

to the cone 17 and is slipped on the spindle in engagement with the opposite end of the bearing. A holding nut 19 is then threaded on the spindle for forcing the cone 18 into intimate contact with the bearing 11 so that the spindle will be clamped to the bearing for rotation therewith.

Mounted upon the shaft 15 is an arm 20. The arm 20 is provided at a point intermediate its ends with a hub sleeve 21 for receiving the shaft 15 and a set screw 22 can be employed for holding the hub on the shaft for permitting the arm to be initially adjusted relative to the brake drum 10. The arm on one side of the hub 21 is provided with a longitudinally extending slot 23 through which protrudes the armature shaft 24 of the motor 25. The armature shaft 24 has keyed or otherwise secured thereto a suitable driving wheel 26 for operating on the faces of the brake drum 10. The casing of the motor 25 also carries clamping screws or bolts 26 which extend through the slots 23, nuts being threaded on the bolts for engaging the inner face of the arm 20. These bolts will hold the motor and the grinding wheel 26 in an adjusted position relative to the diameter of the brake drum 10, and in order to firmly hold the motor in its adjusted position and facilitate the adjustment of the motor, I provide oppositely disposed adjusting screws 28 for impinging against the sides of the casing of the motor 25. These screws 28 can be carried by lugs 29 pivotally secured to the arm 20 on opposite sides of the motor 25. The end of the arm 20 on the opposite side of the hub 21 from the motor 25 carries a counter balancing weight 30, as clearly shown in Figure 1.

In order to effectively conduct the current to the motor 25 during the rotation of the shaft 15, the shaft 15 has secured thereto suitable conductor rings 31, which can be insulated one from the other and from the shaft 15 in any preferred way. These conductor rings 31 are connected to the terminals of the motor by suitable wires 32. The end of the shaft 15 adjacent to the conductor rings 31 can be reduced to provide a support for a bracket 33 which is loosely mounted on the shaft and held against rotation thereon. This stationary bracket arm 33 carries suitable brush holders 34 which likewise can be insulated one from the other and from the bracket 33 in any preferred way. These brush holders 34 carry brushes 35 for engaging the collector rings and suitable feed and return wires 36 are connected to said brush holders.

In order to feed the grinding wheel across the face of the brake drum 10, the shaft 15 can be connected with the spindle 16 by fine threads 37 and a crank 38 can be provided for rotating the shaft relative to the spindle so as to feed the shaft longitudinally of the spindle.

In operation of my improved device the same is firmly clamped to the bearing of the wheel A as heretobefore described for rotation with said bearing after which the arm 20 can be initially adjusted and secured to the shaft 15 for positioning the grinding wheel or head 26 relative to the brake drum 10. The current can now be turned on from the motor 25 so as to rotate the grinding wheel 26 and the arm 20 can be rotated for bringing the grinding wheel 26 circumferentially around the brake drum.

The feed crank 38 can be rotated during the rotation of the arm so as to feed the grinding wheel transversely of the drum, as heretobefore explained. It is obvious that the grinding wheel can be used both internally and externally of the drum so that both surfaces thereof can be trued, if necessary.

It is to be also understood that different sizes of cones 17 and 18 can be employed so that different sizes of wheel bearings can be engaged.

From the foregoing description, it can be seen that I have provided a novel brake drum truing device in which the wheel can be held stationary on the ground while the truing device is rotated relative to the wheel and its drum.

Changes in details may be made without departing from the spirit or the scope of this invention, but:—

What I claim as new is:—

1. A brake drum truing device comprising a spindle, means for clamping the spindle to the hub bearing of a wheel, a shaft extending through the spindle, an arm connected with the shaft, a drive motor secured to the arm, a grinding wheel rotated by said motor, and means for adjusting the shaft in the spindle, longitudinally to draw said grinding wheel transversely over the face of the drum.

2. A brake drum truing device capable of operation while a wheel is standing upright comprising a spindle, means for clamping the spindle to the hub bearing of a wheel, a shaft extending through the spindle, an arm connected with the shaft, a drive motor secured to the arm, a grinding wheel rotated by said motor, means for adjusting the shaft longitudinally of the spindle to move said grinding wheel transversely over the face of a brake drum, and means for adjusting the motor longitudinally of the arm.

3. A brake drum truing device comprising a spindle, means for clamping the spindle to the hub bearing of a wheel, a shaft extending through the spindle, an arm connected with the shaft, a drive motor secured to the arm, a grinding wheel rotated by said motor, means for adjusting the shaft longitudinally within the spindle to move said grinding wheels transversely over the face of a brake drum, and means for initially adjusting the arm on the shaft.

4. A brake drum truing device comprising a spindle, means for clamping the spindle in the hub bearing of a wheel, a shaft extending and longitudinally adjustable through the spindle, an arm rotatable with the shaft, a motor secured to the arm, a grinding wheel driven by the motor and movable transversely over the face of a brake drum by the longitudinal adjustment of said shaft, a stationary bracket arm, electric conductor rings rotatable with the shaft and electrically connected to the terminals of the motor, and brushes for the conductor rings carried by said bracket.

5. A brake drum truing device comprising a spindle having a cone formed therein for engaging one end of a bearing, said spindle adapted to extend through the hub of a wheel, a removable and adjustable cone fitted on said spindle opposite to the first cone for engaging the other end of a bearing, means for clamping the adjustable cone on the spindle, a shaft extending axially through the spindle, means for adjusting the shaft longitudinally in the spindle, an arm secured to the shaft, a motor adjustable longitudinally of the arm including an armature shaft, a grinding wheel secured to the armature shaft, a counter balancing weight secured to the ends of the arm opposite to the end carrying the motor, and means for feeding electricity to the motor.

In testimony whereof I affix my signature.

WILLIAM H. ROSS.