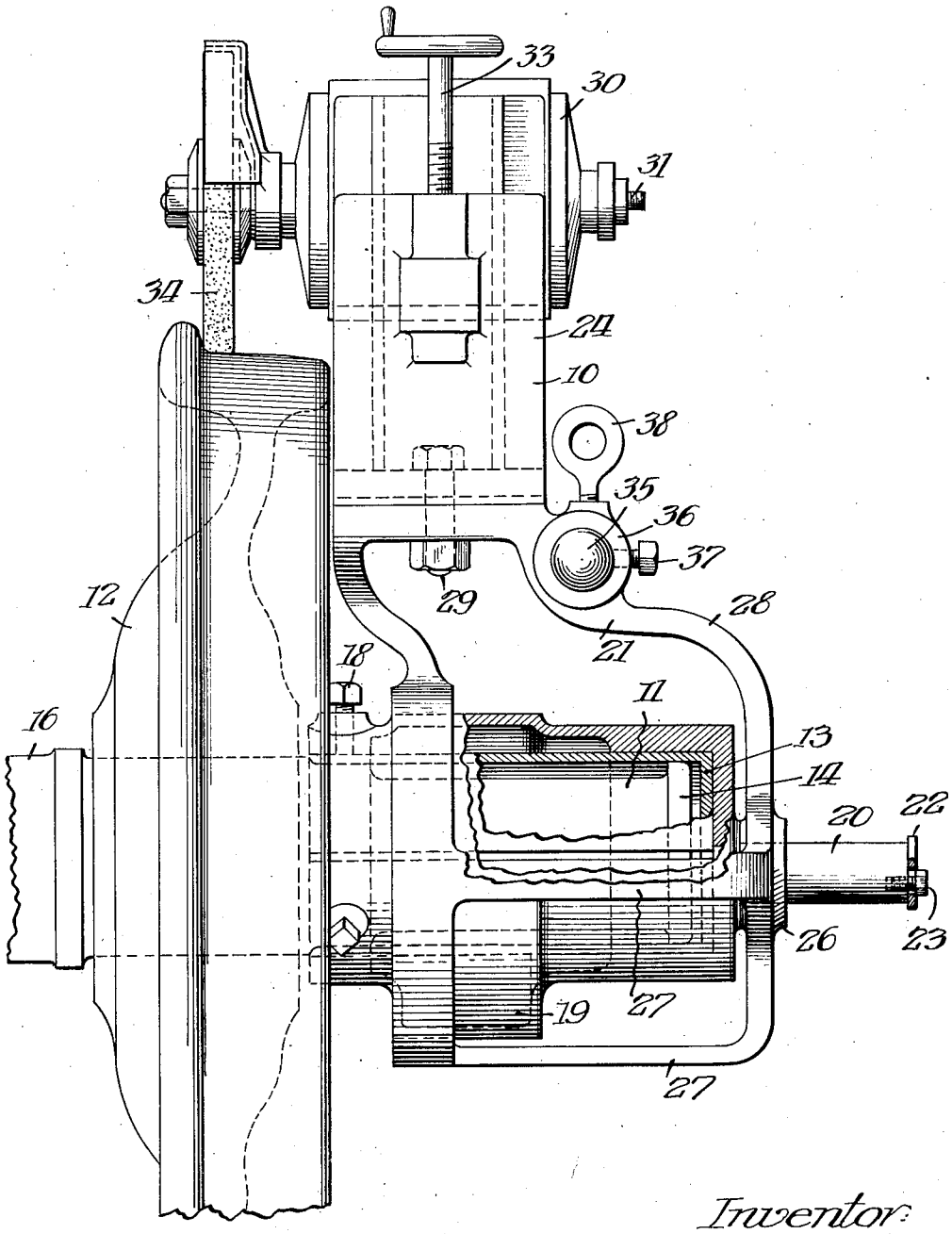
June 28, 1927. 1,633,885

M. CASTILLO

PORTABLE GRINDER

Filed March 27, 1924 2 Sheets-Sheet 1

Fig. 1



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Filed March 27, 1924 2 Sheets-Sheet 2

Fig. 2

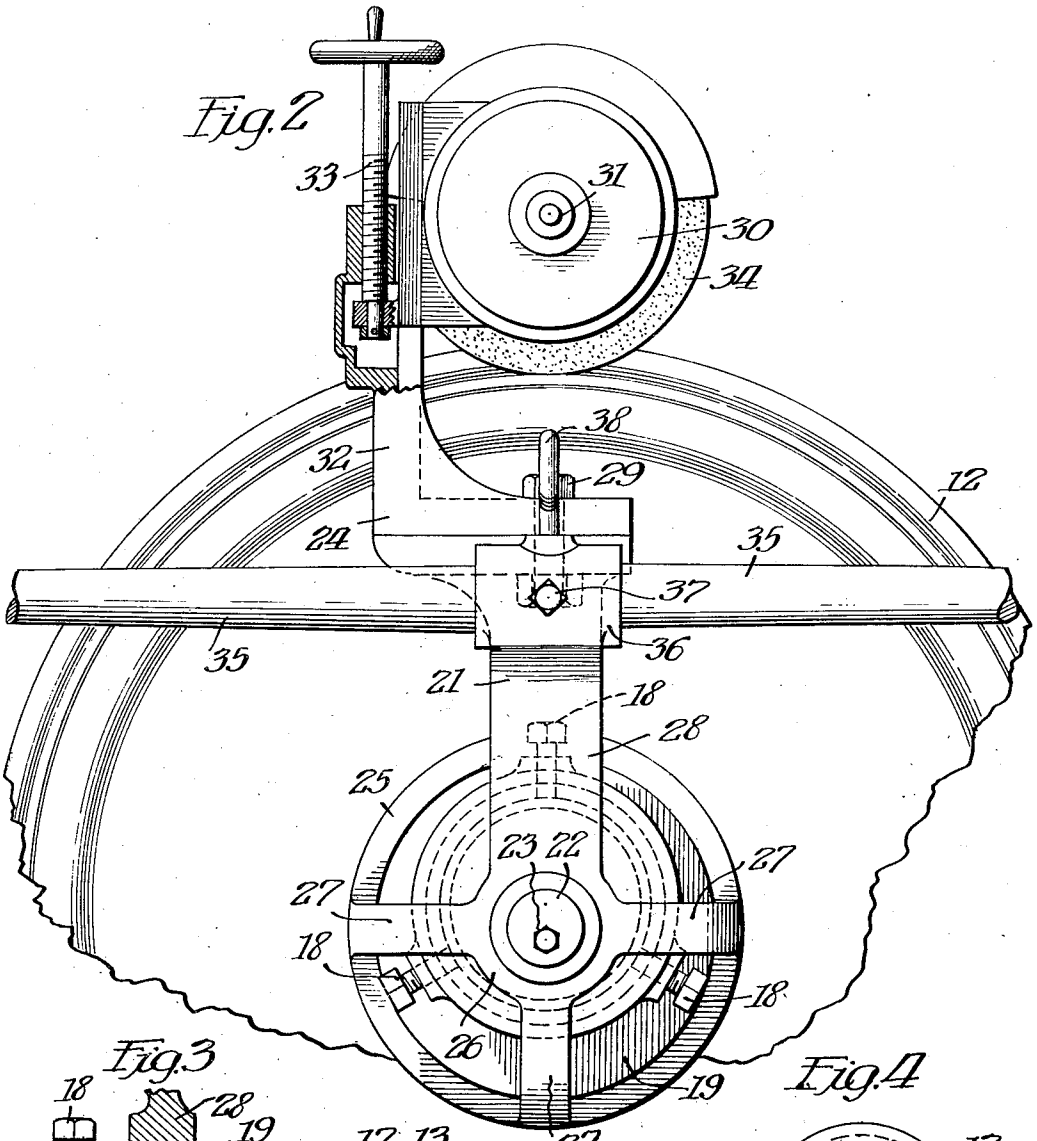


Fig. 3

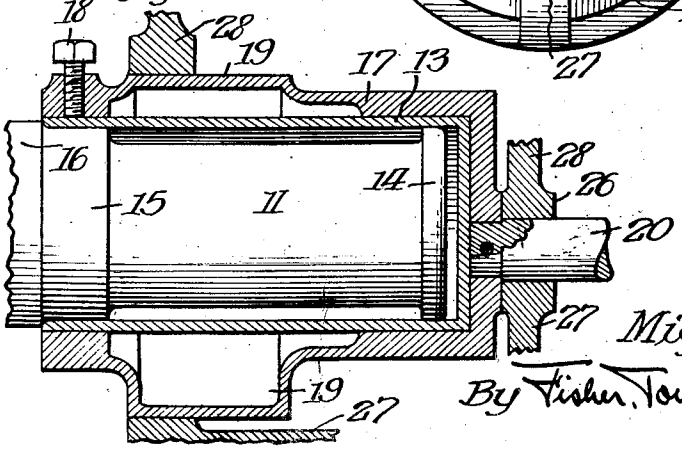
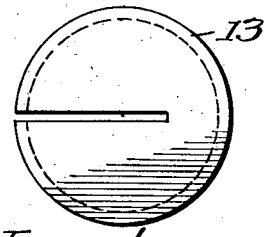


Fig. 4



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Patented June 28, 1927. 1,633,885

UNITED STATES PATENT OFFICE.

MIGUEL CASTILLO, OF MEXICO CITY, MEXICO, ASSIGNOR OF ONE-HALF TO S. W. FISHER, OF CHICAGO, ILLINOIS.

PORTABLE GRINDER.

Application filed March 27, 1924, Serial No. 702,338, and in Mexico June 19, 1923.

This invention relates to portable grinders but more particularly to such as are adapted for removing flat spots from wheels of railway cars and has for its primary object to provide a simple and efficient device of this character.

The many other objects and advantages of my invention will be better understood by reference to the following specification when considered in connection with the accompanying drawings illustrating a selected embodiment thereof, in which:—

Fig. 1 is a side elevation partially in section.

Fig. 2 is a rear elevation partially in section.

Fig. 3 is a detail sectional view, and

Fig. 4 is a detail end elevation of the cap.

Referring to the drawings, the grinder 10 is mounted on the journal 11 of a car wheel 12. A longitudinally slotted cap 13 is slipped over the flange 14 of the journal and the part 15 of the axle 16 which protrudes from the wheel hub. These caps vary in size to fit different sizes of journal. A bushing 17 fits on the cap 13 and is fastened thereto by conveniently placed set screws 18, or other suitable means, which likewise clamp the cap on the axle. This bushing has two eccentric parts 19 and 20. The part 19 abuts the end of the wheel hub and the part 20 is located at the flanged end of the journal. The part 19 resembles in form an eccentric on a locomotive while the part 20 is a mere pivot pin. Both of these eccentric parts are concentric respecting each other but are eccentric relative to the center of the journal on which they are mounted. The eccentric parts of this bushing serve as the axis for the oscillatory movement of pedestal 21 of the apparatus. These parts likewise act as supporting guides to permit the pedestal to be moved transversely of the peripheral face of the wheel during the grinding operation. A stop 22 is secured upon the outer end of the part 20 by means of a stud 23 to limit the travel of the pedestal in such transverse movement.

The pedestal 21 forms the support for a gusset plate 24 which is mortised thereto. This pedestal comprises end members 25 and 26 respectively fitting on the eccentric parts 19 and 20 of the bushing and connected by a series of bars 27 and 28. The bar 28 is the portion of the pedestal on which the gusset plate is mounted. A bolt 29 is provided to clamp the gusset plate in position on the pedestal.

In the present embodiment of my invention the gusset plate 24 is angular in form to provide an offset support for the motor 30. This enables the axis of the motor shaft 31 to be located in the same vertical plane as the axis of the car wheel. The motor is mounted on the upright portion 32 of the plate 24 by means of a mortise joint which enables the motor to be raised and lowered relative to the car wheel by a feed screw 33. The grinding wheel 34 is mounted on the motor shaft in the customary manner.

The grinding wheel is oscillated and moved transversely by means of a suitable hand lever as 35, mounted in the pedestal at 36 and locked therein by a set screw 37. An eyelet 38 is provided to enable the grinder to be engaged by suitable hoisting and conveying apparatus and transported about the shop. The particular construction of the grinding unit forms no part per se of the present invention and is shown merely for the purpose of illustration.

Prior to commencing the grinding operation, it is necessary to properly center the apparatus so that it will make its cuts on the wheel tread at the sides of the flat spot and that the removal of the metal will be even on both sides of such spot. To this end, the bushing 17 is placed upon the cap so that the axis of the upper set screw 18 will lie in the radial plane passing through the center point of the flat spot or arc to be ground.

In the operation of the device, the motor-driven grinding wheel is fed toward the periphery of the car wheel until it contacts with the borders of the flat spot. The operator then imparts an oscillating movement to the apparatus by means of the hand lever 35, slowly advancing the feed screw as the metal is removed. At the same time the grinding wheel is gradually advanced across the wheel tread, the pedestal sliding longitudinally of the bushing. This transverse movement is accomplished by the operator pressing upon the lever 35.

The extent of the cuts of the grinding wheel will depend upon the size of the flat spot. For example, on a flat spot of three and one-half inches in length the final cut is about thirteen inches, due to the arc described by the apparatus in its oscillating

movement. The apparatus effaces the flat spot while substantially preserving the circular form of the wheel. This is due to the eccentric mounting of the apparatus.

One of the features of the apparatus is that the operation can be performed by simply removing the wheels from the trucks at any place where current for the motor is available. It is therefore unnecessary to remove the wheels from the axle or take them to a machine shop. This provides a very material saving in cost and time. The operation may be repeated on the wheel as often as flat spots occur until the limit of the hardened material is reached. The slightly oval shape of the wheel after the grinding operation is not material and the wheel so ground is entirely serviceable. These wheels would otherwise be sent to the scrap heap when the flat spot equalled or exceeded two and one-half inches in length in accordance with established rules.

I claim as my invention:

1. In an apparatus for removing flat spots from railroad car wheels, an eccentric bearing member adapted to be fixedly mounted on the axle of the wheel, a pedestal revolubly mounted on said bearing member to rotate and slide freely axially both directly thereon, and a grinding unit mounted on said pedestal.

2. In an apparatus for removing flat spots from railroad car wheels, a removably eccentric bearing member adapted for fixed attachment on the axle of the wheel, a pedestal revolubly mounted on said bearing member to both rotate and slide freely axially thereon, and a grinding unit mounted on said pedestal, said grinding unit being adjustable with respect to the tread of the wheel.

3. A portable grinder for car wheels to remove flat spots therefrom, comprising a cap adapted to fit over the flanged journal of the car wheel, a bushing fitted over the cap and anchored thereto, said bushing having a plurality of eccentric portions, a pedestal having bearing portions mounted on the eccentric portions of the bushing and extending radially therefrom, a gusset plate mounted on the pedestal, said pedestal being adapted for adjustment in a plane across the tread of the wheel, and a power driven grinder unit mounted on said gusset.

4. A portable grinder for car wheels to remove flat spots therefrom, comprising a cap adapted to fit over the flanged journal of the car wheel, a bushing fitted over the cap and anchored thereto, said bushing having two eccentric portions, a pedestal having bearing portions mounted on the eccentric portions of the bushing and extending radially therefrom, a gusset mortised to the pedestal and adjustable with the pedestal in line with the axle of the wheel toward and away from the wheel, a handle bar carried by the pedestal outwardly of the gusset and extending transversely to the axis of the wheel, a motor driven grinding wheel mounted on the gusset for action upon the tread of the wheel, and means for adjusting the motor and grinding wheel toward and away from the tread of the car wheel in line with the axis thereof.

5. In an apparatus for removing flat spots from railroad car wheels, a member adapted to be fixedly mounted on the car wheel axle and having a reduced extension beyond the end of said axle, said member providing a pair of spaced concentric bearing portions disposed eccentrically of said wheel, a pedestal mounted to swing about said bearing portions, and a grinding unit mounted on said pedestal to be carried thereby in an arc slightly eccentric to the tread of the car wheel over the flat surface to be ground.

6. In a portable apparatus for removing flat spots from railroad car wheels, a tubular member adapted to be placed over the end flanges of the journal of the wheel, an eccentric bearing member mounted on said tubular member and provided with a pivot pin projecting outwardly from the outer end thereof and concentric therewith, means for clamping said eccentric bearing member in fixed position on said journal, a pedestal revolubly mounted on said bearing member and pivot pin, and a power-driven grinder unit mounted on said pedestal.

7. A portable grinder for car wheels comprising an eccentric bearing member adapted to be mounted upon the journal end of the wheel axle and having a reduced extension on the outer end thereof concentric therewith, a pedestal revolubly and slidably mounted on said bearing member and reduced extension, and a power-driven grinder unit mounted on said pedestal, the outer end of the bearing member serving as a stop to limit the movement of the pedestal in one direction, and means on the outer end of the reduced extension to limit the movement of the pedestal in the other direction.

8. A portable grinder for car wheels comprising a pedestal adapted to be revolubly and slidably mounted on the axle of the wheel and eccentrically thereof and having a portion adjacent its upper end offset in the direction of the plane of the wheel, and a grinding unit adjustably mounted on said offset portion with its axis aligned with a vertical radius of the car wheel when the pedestal is vertically disposed and thereby adjustable radially of the wheel.

9. A portable grinder for car wheels comprising a pedestal, means for mounting the pedestal to be revoluble eccentrically and slidable on the axle of the wheel, a handle on said pedestal to permit manual oscillation thereof, a gusset plate connected to said pedestal and having a portion offset from the

axis of the wheel, and a grinding unit mounted on said offset portion of the plate with its axis aligned with a vertical radius of the car wheel when the pedestal is vertically arranged and adjustable thereon radially of the wheel as well as movable with the pedestal transversely across the tread of the wheel.

10. A portable grinder for removing flat spots from railroad car wheels comprising a pedestal having an eccentric bearing member by which it is revolubly and slidably mounted on the axle of the car wheel and having a portion adjacent its other end offset in the direction of the plane of the wheel, and a grinding unit adjustably mounted on said offset portion with its axis aligned with a vertical radius of the car wheel when the pedestal is vertically disposed and in a plane passing through the highest point of the eccentric mounting and axis thereof, said axis being disposed below the axis of the wheel.

MIGUEL CASTILLO.