Sept. 17, 1940. R. G. McGOWAN 2,215,403

LOCOMOTIVE AND CAR WHEEL GRINDING MACHINE

Filed Oct. 19, 1939 3 Sheets-Sheet 1

Fig. 1.

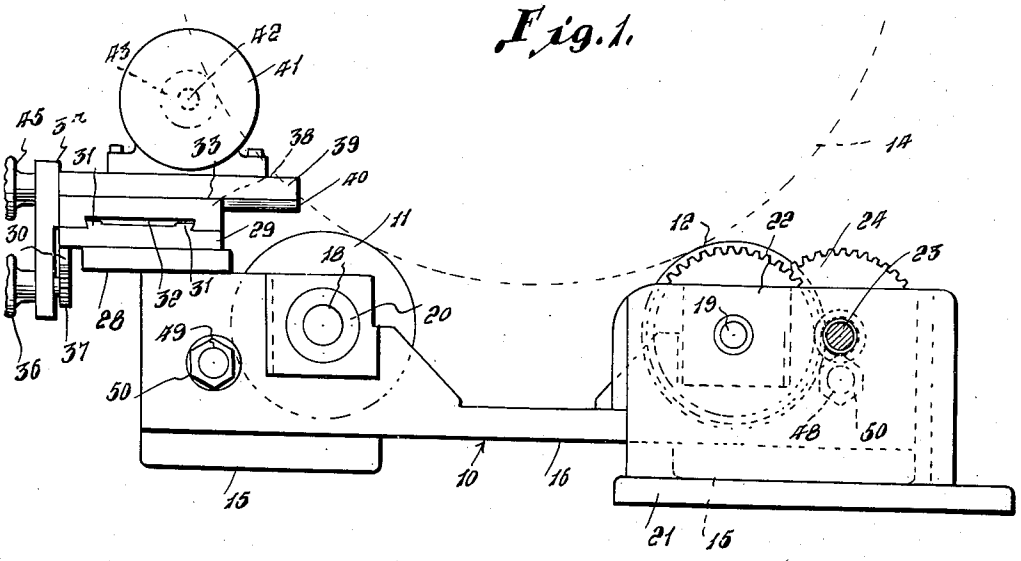


Fig. 2.

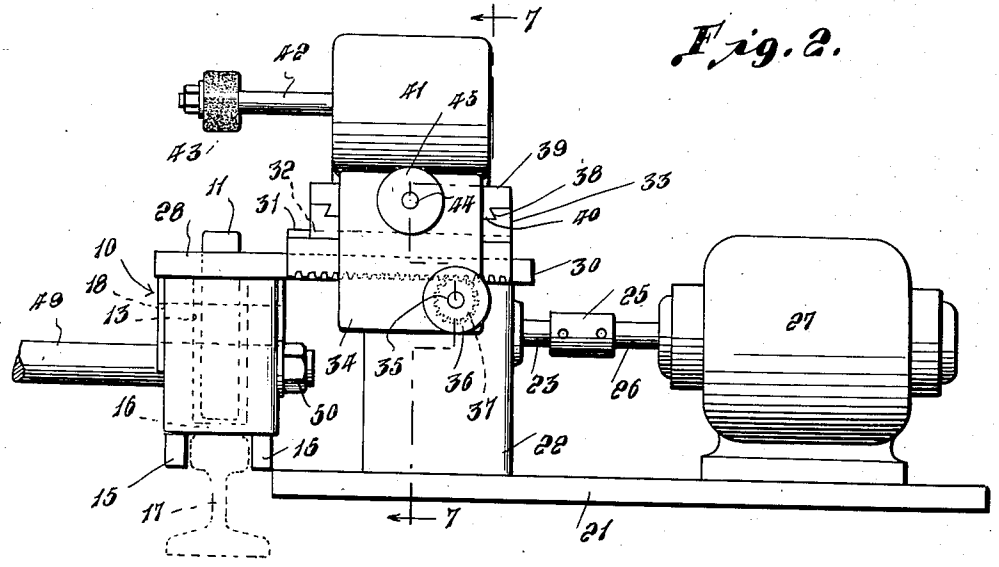
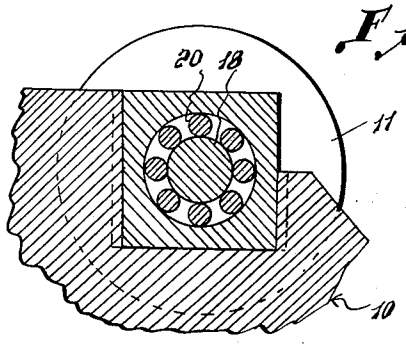


Fig. 5.



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Filed Oct. 19, 1939 3 Sheets-Sheet 2

Fig. 3.

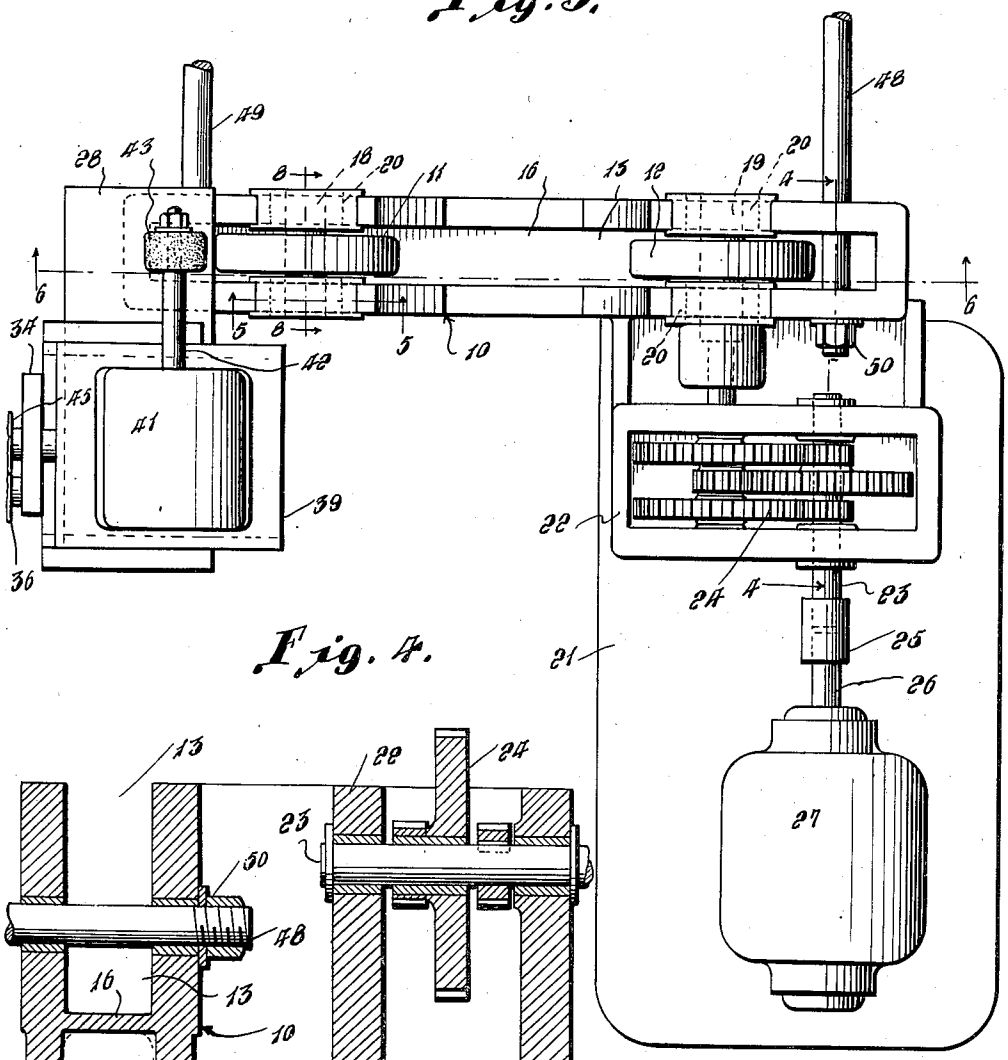


Fig. 4.

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Filed Oct. 19, 1939 3 Sheets-Sheet 3

Fig. 6.

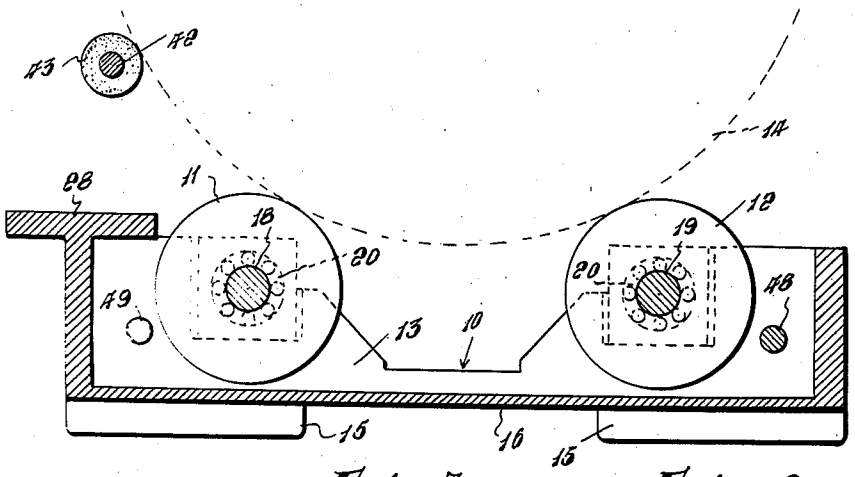


Fig. 7.

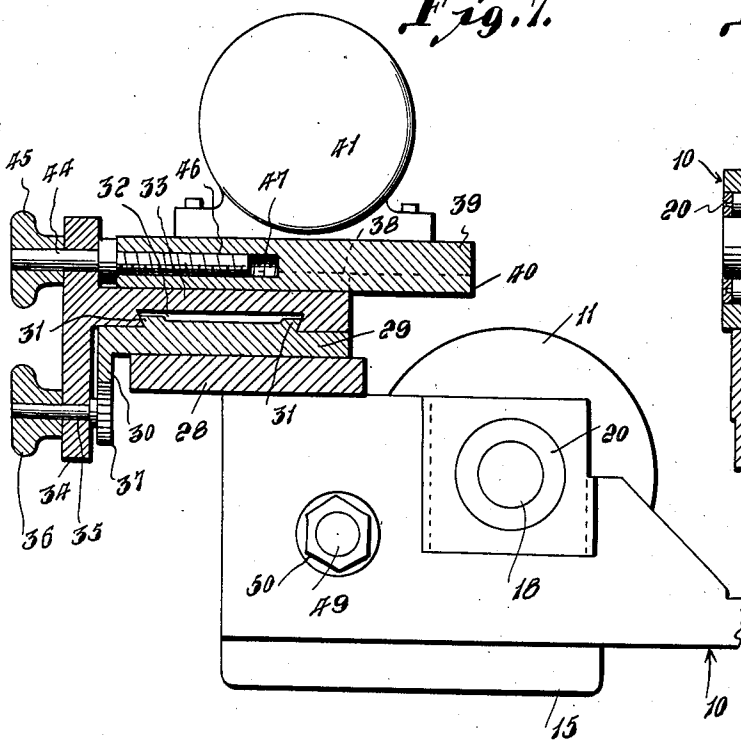
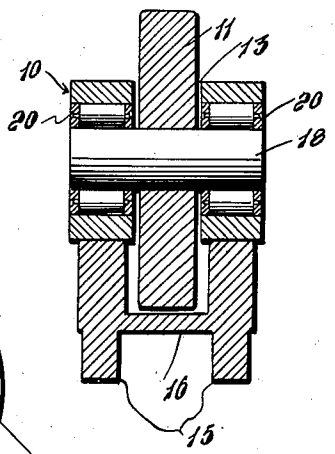


Fig. 8.



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UNITED STATES PATENT OFFICE

2,215,403

LOCOMOTIVE AND CAR WHEEL GRINDING MACHINE

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Application October 19, 1939, Serial No. 300,266

4 Claims. (Cl. 51—179)

This invention relates to a machine or device for grinding and truing up the wheels of cars and locomotives.

It is particularly aimed to provide a construction which is portable so as to be capable of use wherever the locomotive or car is found, thus avoiding the necessity of placing the locomotive or car in the shop, and enabling the work to be more rapidly and expeditiously done.

The more specific objects and advantages will become apparent from a consideration of the description following taken in connection with accompanying drawings illustrating an operative embodiment.

In said drawings—

Figure 1 is a view in side elevation of my improved device;

Figure 2 is an end elevation taken at a right angle to Figure 1;

Figure 3 is a plan view of the machine;

Figure 4 is a section taken on the line 4—4 of Figure 3;

Figure 5 is a section taken on the line 5—5 of Figure 3;

Figure 6 is a section taken on the line 6—6 of Figure 3;

Figure 7 is a section taken on the line 7—7 of Figure 2, and

Figure 8 is a detail section taken on the line 8—8 of Figure 3.

Referring specifically to the drawings wherein like reference characters designate like or similar parts, 10 generally designates a shoe, or frame which may be box-like or rectangular in plan containing a pair of rollers 11 and 12, disposed in the cavity 13 thereof and which rollers in turn engage the periphery of the wheel of a car or locomotive, such as is fragmentarily suggested at 14, in Figures 1 and 6. Said shoe is portable and has separated depending side flanges 15, extending below a bottom wall or web 16. The web 16 is adapted to rest on top of the rail upon which adjacent wheel 14 travels, the same being suggested at 17. It will be noted that the flanges 15 are disposed on opposite sides of the head or ball of the rail 17, thus mounting the shoe against displacement.

The supporting wheels 11 and 12 are rigid on shafts 18 and 19, suitably journaled in roller bearings as at 20, mounted in the wall of the shoe 10.

Extending laterally from shoe 10, preferably integral therewith is a shelf or table 21 having an open casing 22 mounted thereon. Shaft 19 extends through and is journaled in the wall of the casing. Another shaft 23 extends through and is journaled in the wall of casing 22 and such shafts 19 and 23 have intermeshing speed reducing gearing as at 24. Shaft 23 at 25, is detachably connected to the driven or power shaft 26 of an electric or other motor 27, supported on the shelf 21.

The shoe 10, at the top thereof, has a laterally extending supporting plate or shelf 28 which may be integral with it. Suitably rigidly mounted on plate 28 is a bedplate 29 having a depending rack bar or flange 30. Said bedplate 29 has a dovetail rib 31 rising from the same fitted into a dovetail recess 32 of a slide 33. Slide 33 in cross section is of T-shape, having a vertical wall as at 34, extending above and below the slide proper. Journaled in plate 34 below the rack 30 is a shaft 35, preferably operable by a knob 36. Keyed on shaft 35 is a pinion 37, which is enmeshed with the teeth of the rack 30. As a result, turning of the knob 36 will cause the pinion 37, by engagement with the teeth of rack 30, to move the slide 33 transversely with respect to the shoe 10 and rail 17.

On the upper surface of the slide 33 is a dovetail groove 38, extending at a right angle to the groove 32. A slidable carriage 39 is disposed on the slide 33, having a depending dovetail 40, occupying the groove 38. Carriage 39 mounts an electric motor or the equivalent 41 which rotates its drive shaft 42, upon which a grinding wheel 43 is detachably mounted and which is engageable with the tread or periphery of the wheel 14. Carriage 39 is movable toward or away from the periphery of wheel 14 through the turning of a shaft 44 journaled in wall 34, the same having an operating knob 45. Said shaft 44 has a screw threaded portion 46, which is engaged with screw threads 47 in an opening of the carriage 39.

The device is preferably used in connected pairs, the two devices of the pairs being connected together by cross rods or bolts such as 48 and 49, detachably bolted thereto as at 50.

In order to engage the wheels 14 with the rollers 11 and 12 of the two shoes, the wheels and rolling stock carrying them are raised by means of jacks or the like and the devices of the invention disposed beneath the wheels in supporting contact therewith. But one of such devices need have the reduction gear 22, motor 27 and similar parts, since the operation of motor 27, will drive shaft 19 and through one of the rollers 12, will drive both wheels 14 since as usual they rotate with the same axle. Both wheels 14 may be ground at the same time or they may be ground one at a time. In the latter event, but one of

the slides and parts carried thereby need be employed, since the same can be interchanged from the shelf 28 of one shoe 10 to the shelf 28 of the other shoe 10. The operation of the motor or motors 41 will operate the grinding wheel or wheels 43 and the latter in turn will grind the periphery of the wheel or wheels 14. Each of the wheels 43, may be properly disposed with respect to the periphery of wheel 14 adjacent the same, through the adjustment of the knobs 36 and 45, since the slide and carriage and associated parts, enable movement of the grinding wheels in paths at right angles to each other.

Where a single device is used, that is one used as shown in the drawings, to grind but one wheel 14, the other wheel 14 is jacked or supported in a suitable manner, whereby the axis of the wheel or wheels 14 will be level.

Various changes may be resorted to provided they fall within the spirit and scope of the invention.

I claim as my invention:

1. A grinding device of the class described comprising a shoe, said shoe having means for mounting the same on a track rail, means on the shoe for supporting contact with a wheel and including a driving member for the wheel, grinding means for the wheel, a driving motor for the driving member, reduction gearing between the driving motor and said driving member, means supporting the reduction gearing and motor from the shoe in the form of a shelf integral with said shoe extending laterally from the shoe, and means supporting the grinding means extending laterally from adjacent the top of the same side of the shoe as said shelf.

2. A grinding device of the class described comprising a shoe, said shoe having means for mounting the same on a track rail, means on the shoe for supporting contact with a wheel and including a driving member for the wheel, grinding means for the wheel, a driving motor for the driving member, reduction gearing between the driving motor and said driving member, means supporting the reduction gearing and motor from the shoe, means operable to move the grinding means relatively to the wheel in paths at a right angle to each other, consisting of a carriage, a motor on the carriage having a shaft carrying said grinding means, a slide, means on the slide to move the carriage thereon, a bedplate rigid on said shoe adjacent the top and projecting partly beyond one end of the shoe, means beyond said one end of the shoe to operate the carriage, and means beyond said one end of the shoe operable to move the slide on the bedplate at a right angle to the path of movement of the carriage.

3. A grinding device of the class described comprising a shoe, said shoe having means for mounting the same on a track rail, means on the shoe for supporting contact with a wheel and including a driving member for the wheel, grinding means for the wheel, a driving motor for the driving member, reduction gearing between the driving motor and said driving member, means supporting the reduction gearing and motor from the shoe, means operable to move the grinding means relatively to the wheel in paths at a right angle to each other, consisting of a carriage, a motor on the carriage having a shaft carrying said grinding means, a slide, means on the slide to move the carriage thereon, a bedplate, means to move the slide on the bedplate at a right angle to the path of movement of the carriage, including a bedplate having a dovetail connection with the slide, a flange on the bedplate having rack teeth, and gear means on the slide engageable with said rack teeth, and means supporting the bedplate on the shoe.

4. A grinding device of the class described comprising a shoe, said shoe having means for mounting the same on a track rail, means on the shoe for supporting contact with a wheel and including a driving member for the wheel, grinding means for the wheel, a driving motor for the driving member, reduction gearing between the driving motor and said driving member, means supporting the reduction gearing and motor from the shoe, means operable to move the grinding means relatively to the wheel in paths at a right angle to each other, consisting of a carriage, a motor on the carriage having a shaft carrying said grinding means, a slide, means on the slide to move the carriage thereon, a bedplate, means to move the slide on the bedplate at a right angle to the path of movement of the carriage, including a bedplate having a dovetail connection with the slide, a flange on the bedplate having rack teeth, gear means on the slide engageable with said rack teeth, means supporting the bedplate on the shoe, a second bedplate extending from the shoe, reduction gearing on said bedplate, a motor on the second bedplate connected to the reduction gearing, and a connection from the reduction gearing to said driving member.

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