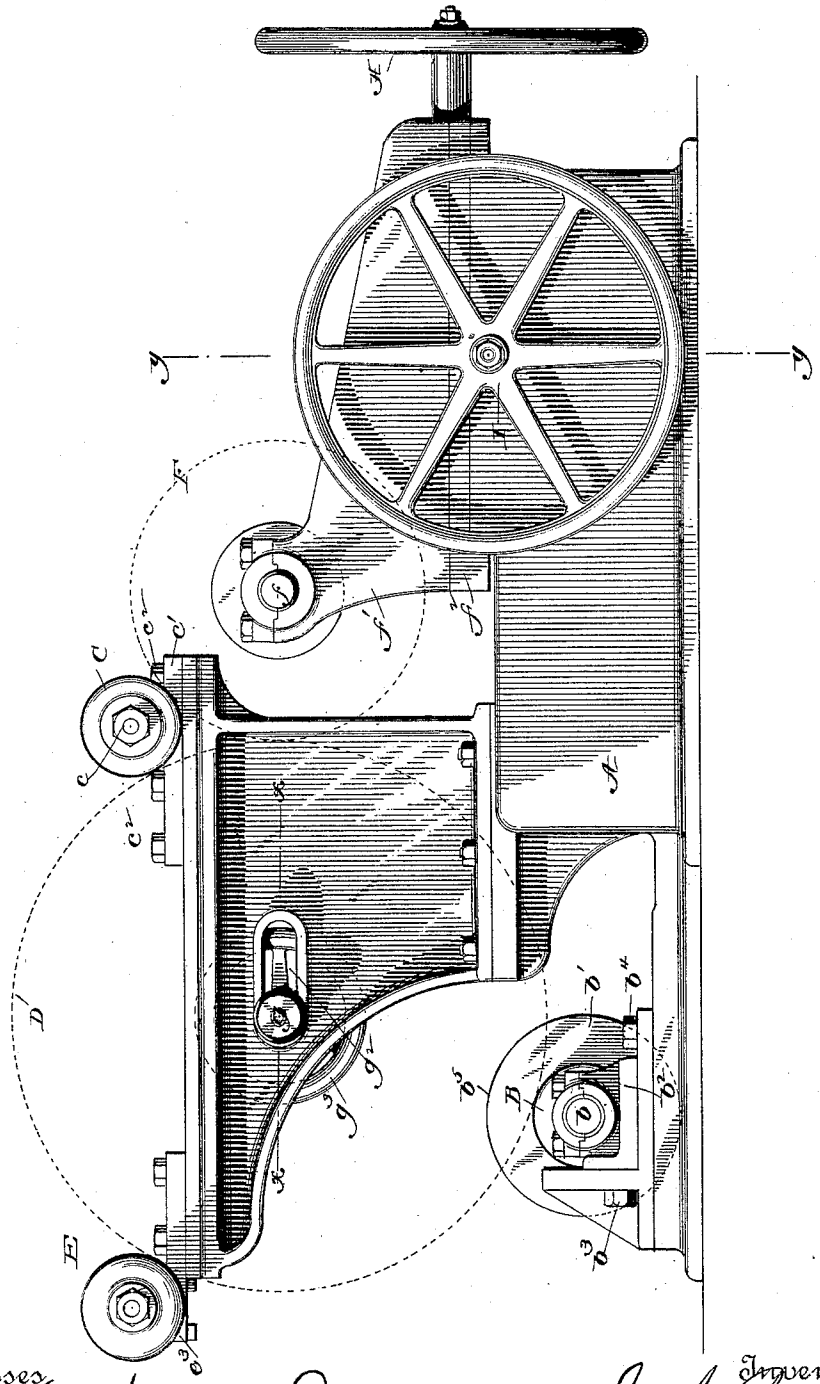
(No Model.) 4 Sheets—Sheet 1.

J. N. BARR.

MACHINE FOR TRUING CAR WHEELS.

No. 421,377. Patented Feb. 18, 1890.

Fig. 1.



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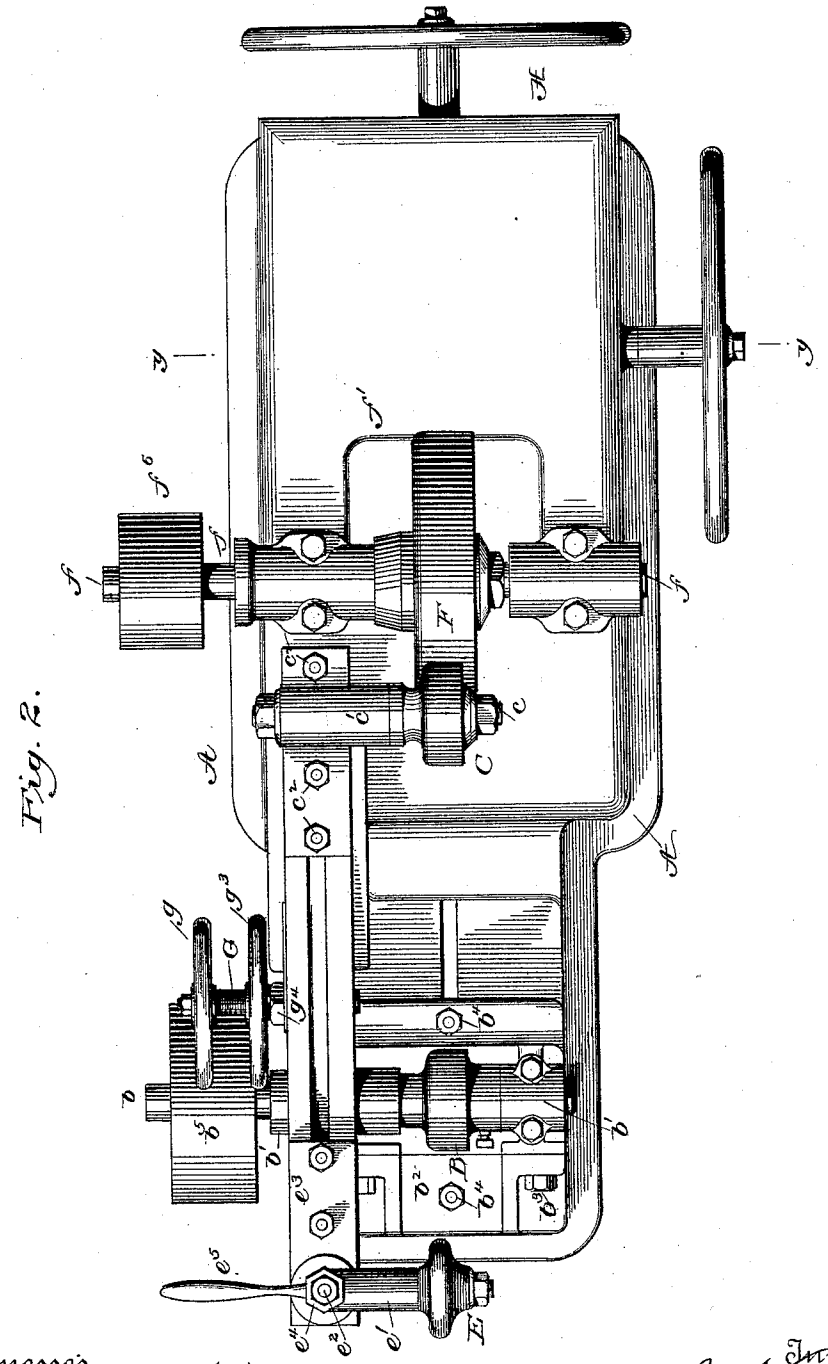


Fig. 2.

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Fig. 4.

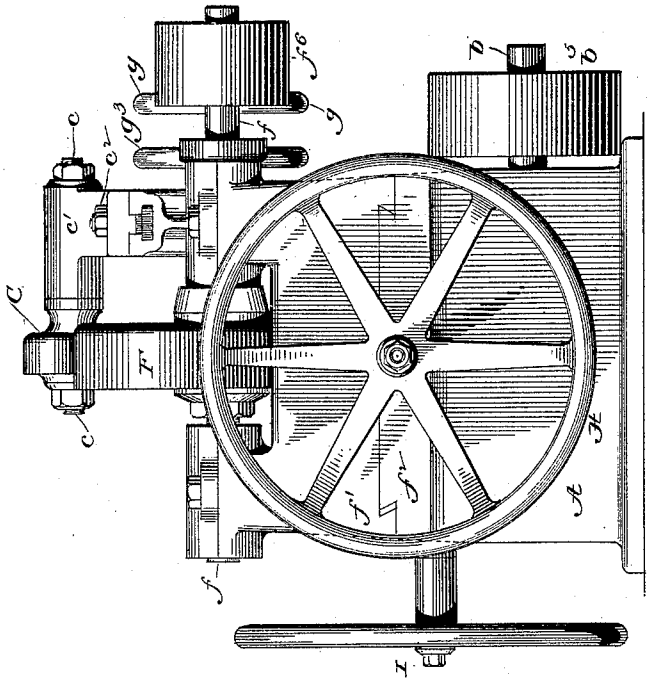
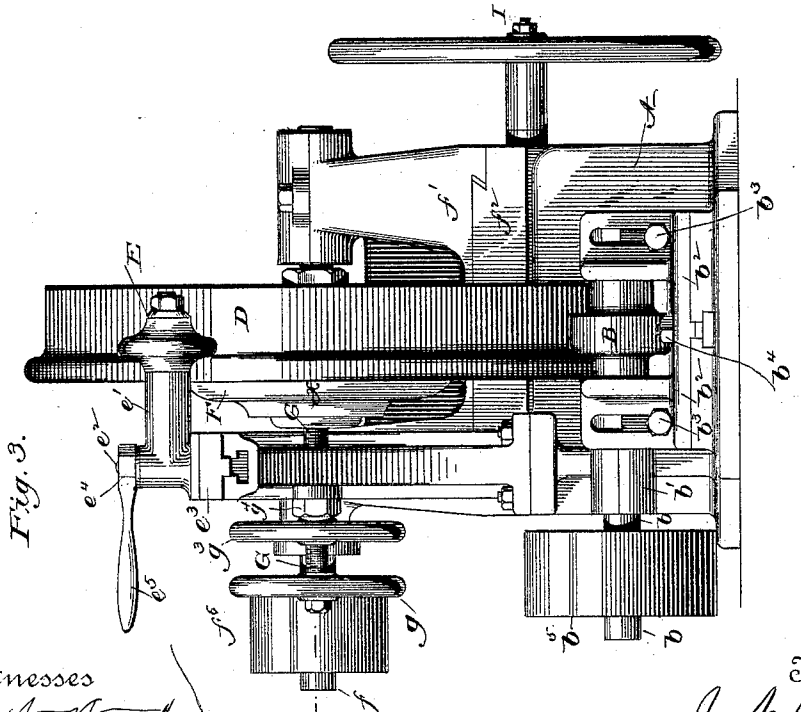


Fig. 3.



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(No Model.) 4 Sheets—Sheet 4.

J. N. BARR.

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Fig. 5.

ON LINE X—X

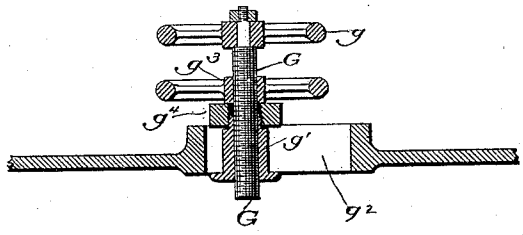
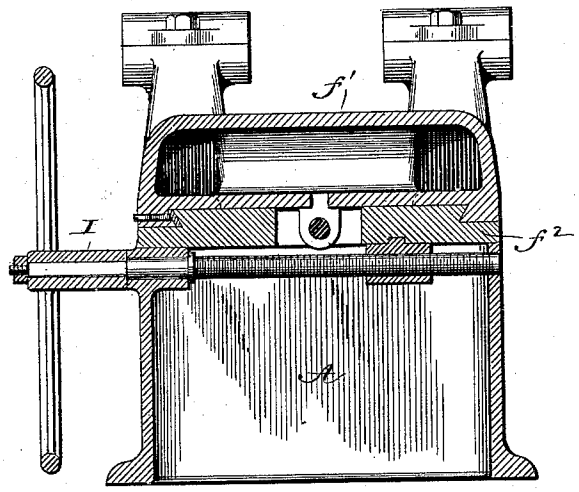


Fig. 6.

ON LINE Y—Y



Witnesses
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UNITED STATES PATENT OFFICE.

JACOB N. BARR, OF MILWAUKEE, WISCONSIN.

MACHINE FOR TRUING CAR-WHEELS.

SPECIFICATION forming part of Letters Patent No. 421,377, dated February 18, 1890.

Application filed April 10, 1889. Renewed January 4, 1890. Serial No. 335,904. (No model.)

To all whom it may concern:

Be it known that I, JACOB N. BARR, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain Improvements in Machines for Truing Car-Wheels, of which the following is a specification.

The present machine is intended to bring bodies, and more especially car-wheels, to a true circular form without the necessity of chucking them or mounting them on a central support, as usual. It is based upon the principle elaborated in my application filed on the 11th day of March, 1889, Serial No. 302,769, that a circle of a certain diameter and no other will pass through three points in a given relation to each other, and it involves as its leading elements rolling supports to act on the periphery of the wheel or body, an abrading-wheel, and means for adjusting said elements and for confining the wheel in position.

In the accompanying drawings, Figure 1 is a side elevation of my machine. Fig. 2 is a top plan view of the same. Fig. 3 is an end elevation of the machine, with a car-wheel in position therein. Fig. 4 is an elevation looking from the opposite end. Figs. 5 and 6 are sections of details on the lines $x\,x$ and $y\,y$, respectively.

Referring to the drawings, A represents the main frame; B and C, the two rolling supports mounted thereon; D, the car-wheel seated at its circumference against and sustained by the rolling supports; E, the rolling guide and pressure device acting against the car-wheel to hold the same in position on the rolling supports, and F the rotary abrading-wheel.

The main frame may be of any form and construction adapted to give support to the other parts, hereinafter described.

The rolling support B consists simply of a wheel or pulley carried by a horizontal shaft b, provided with a driving-pulley b^5, mounted in boxes b', which latter are secured to arms rising from plates b^2 by means of bolts b^3, passing through vertical slots in said arms in order to admit of the pulley being raised or lowered. The plate b^2 is secured to the base of the main frame by vertical bolts b^4, having heads which enter horizontal grooves in the frame in order to admit of the entire rolling support being adjusted horizontally. The rotary support C consists, also, of a pulley mounted on a horizontal shaft c, sustained in a block c', which is mounted on top of the main frame secured by bolts c^2, entering horizontal grooves in the frame, so that the roller may be adjusted horizontally. The guide and pressure roll E turns on a journal at one end of the horizontal supporting-arm e', which latter is mounted at the opposite end on a vertical bolt e^2, passing downward through a slide e^3, engaging in a T-groove on the top of the frame, the bolt being provided at the upper end with a tightening-nut e^4, operated by a handle e^5 or like device.

The foregoing construction admits of the guide or pressure device E being moved horizontally, so as to vary its distance from the rolling supports B and C, and thus adapt the machine for holding wheels of different sizes. The construction also admits of the arm e' being turned horizontally, so as to throw the pressure-roll backward in order to permit the introduction and removal of the wheel.

In operating on a car-wheel, it is introduced in such position that the rolling supports and the pressure device bear upon its tread and also against the outer face of its flange, as plainly shown in Fig. 3. In order that the flange of the wheel may be held firmly against said devices, so as to insure the revolution of the wheel in a true vertical plane, I propose to provide a pressure device to act against the inner side of the wheel. This pressure device may be modified in detail. In its preferred form it consists of a horizontal screw G, provided in the outer end with an operating-wheel g, and passed through a nut g', arranged to slide in a horizontal slot g^2 in the main frame. The screw is provided outside of the frame with a hand-nut g^3, by tightening which the supporting-nut g' and the screw are both held in the required positions. By adjusting the screw endwise it may be caused to act with the required pressure against the face of the wheel at or near its center.

In order to reduce the friction, I introduce between the screw and wheel a plate or washer g^4, which may be sustained either by the wheel or by the screw. The slot g^2 is intended

to permit lateral adjustment of the screw and its supporting-nut in order that the screw may be brought in a central relation to wheels of different diameters. When the machine is to be used only for wheels of a given diameter, the lateral adjustment of the screw is unnecessary.

It is to be distinctly understood that the screw is but one of many forms of pressure device which may be employed, and that my invention contemplates the use of any other pressure device having a similar mode of action.

The grinding or abrading wheel F, which may have a face of any appropriate form, is mounted on a horizontal shaft *f*, which is provided with a driving-pulley f^6 and supported at its two ends in bearings on a plate *f'*, mounted to slide horizontally and longitudinally on an underlying plate f^2, which is in turn mounted to slide transversely on the main frame, this construction permitting the wheel to be adjusted to and from the periphery of the car-wheel, and also transversely of its face or tread.

The adjustment of the abrading-wheel forward and backward is effected by a horizontal hand-screw H, connecting the plates *f'* and f^2, while the lateral adjustment is effected by a horizontal hand-screw I, connecting the hand-screw with the main frame.

The construction of the sliding connections between the parts *f'* f^2 and the main frame, and the connection of the screws therewith, are essentially the same as in milling-machines, metal planers, and other machines in general use, and need not, therefore, be described in detail.

The expression "rolling supports" is employed herein to indicate supports which revolve about their own axes and roll against the periphery of the car-wheel or other object under treatment.

The operation of the machine is as follows: The upper roll E is first turned backward out of the way. The rolling supports B and C are adjusted in relation to each other with reference to the diameter of the wheel to be trued. The wheel is then rolled into position upon said supports, after which the guide and pressure device E is turned inward snugly against the periphery of the wheel and secured in position. The pressure-screw G is then adjusted to a point opposite the center of the car-wheel, turned inward against the same, and fixed in position. Rotary motion being then communicated to the rolling support B, it acts by frictional contact to impart a rotation to the car-wheel. A rotary motion is then imparted to the abrading or grinding wheel, which is slowly advanced by the screw H toward the car-wheel, being given at the same time such lateral motion by screw I as may be necessary to cause its proper action on the tread of the car wheel. The advance of the abrading-wheel is continued until it is found to act on the entire circumference of the car-wheel. When this occurs, it indicates that the wheel has acquired a true cylindrical shape.

While I prefer to locate the abrading-wheel between the rolling supports, as herein shown, it is to be understood that it may be located outside of said supports in the position shown in dotted lines or in any equivalent position.

Having thus described my invention, what I claim is—

1. In a machine for grinding car-wheels, the combination of the two rolling supports and the guide or pressure device to act peripherally on the wheel, and the abrading-wheel, said elements arranged in relation to each other substantially as described.

2. In a machine for truing car-wheels, the combination, with the rolling supports and the abrading-wheel, of the guide or pressure device E, all arranged to act peripherally on the car-wheel, and a pressure device, substantially as shown, to act against the side of the wheel.

3. In combination with the abrading-wheel, the two rolling supports for the car-wheel, and an adjustable bearing, substantially as shown, in which one of the roller-supports is mounted.

4. In a machine for truing car-wheels, the rolling supports to act on the periphery of the wheel, the abrading-wheel, and the support for the abrading-wheel movable in two directions, as described and shown.

5. In a machine for truing car-wheels, the two rolling supports, in combination with the pressure roll or guide and its adjustable support, substantially as shown, whereby wheels of different diameters may be peripherally sustained to prevent their rotation.

6. In a machine for truing car-wheels, the rotary supports B C, to act peripherally on the wheel, in combination with the pressure-wheel and its support pivoted to turn out of the plane of the supports, whereby the ready introduction and removal of the car-wheel are permitted.

7. In combination with the rolling supports to act peripherally on the car-wheel, the pressure-screw, its movable sustaining-nut, and the clamping-nut mounted in the frame, substantially as shown.

In testimony whereof I hereunto set my hand this 25th day of March, 1889, in the presence of two attesting witnesses.

JACOB N. BARR.

Witnesses:
G. E. WEISS,
JENNIE PEMBERTON.