The counter shaft 14 is suitably journaled in supports 23 mounted on the frame 10. The shaft is operated from a motor 24 by suitable driving mechanism such as worm gear 25.

The upper and lower tracks 26 and 27 are provided for guiding the wheel 28 to the different stations. Each track comprises a pair of angle bars 29 and 31, see Fig. 3, held in spaced relation for engaging the flange 30 of the wheel and also arranged at an incline so that a wheel will roll from one station to the next. It is necessary that means be provided for holding the wheel 28 in position during the brushing operation. One manner of accomplishing this is shown in Fig. 1. At the front of the machine, or on the side on which the wheel enters the same, a latch 32 is pivotally connected to the frame 10 and is adapted to be forced upwardly by the wheel as it rolls beneath the same. When the wheel passes beneath the same to a position to be operated upon, the latch 32 will engage the periphery of the wheel and prevent the same from moving backward.

A similar latch 33 is mounted at the rear end of the frame and the same is adapted to engage the periphery or tread portion of the wheel for preventing the forward movement of the said wheel. The latch 33 is provided with rigid extension or bell crank 34, to which a pull rod 35 is pivotally connected. When the wheel 28 rolls beneath the latch 32, it will come in contact with the latch 33, which will prevent its further movement until the pull rod 35 is moved forward for elevating the latch 34 to permit the wheel to pass beneath the same.

A stop 36 is provided in the track 27 for holding the wheel until it is desired to operate upon the same. The latch 36 is pro-
vided with a suitable lever 37 for operating the same.

Since the cleaning mechanism constitutes no part of the present invention, it is not thought necessary to further illustrate or describe the same.

Suitable mechanism is mounted at the rear of the frame 10 for simultaneously rough cleaning or facing the inner end of the hub and the flange of the wheel. The tracks 27 extend through the frame 10 to the grinding mechanism. Suitable guides 38 are provided for guiding and holding the upper portion of the wheel. These guides are on each side of the wheel and below the periphery thereof, so that the flange of the wheel will extend above the same, in order that it may be ground as will presently appear.

The mechanism for rough grinding or facing the inner end of the hub 39 of the wheel 28 will now be described. As shown this means comprises a rotating grinder 41 which is rotated by a suitable motor 42 carried by frame 43. The grinder may be and preferably is mounted on the armature shaft 44, as shown in Fig. 1. The frame 43 is pivotally and slidably mounted on a rod 45 secured adjacent to the lower track 27. The rod 45 is located inwardly of the center of gravity of the motor 42 whereby, gravity will tend to hold the grinder 41 out of contact with the hub. The frame 43 is provided with a stop 46 which is adapted to engage the sill 47 for limiting the outward movement of the said frame. The frame 43 is moved inwardly to bring the grinder 41 into engagement with the hub of the wheel by any suitable means, as by lever 48, rigidly secured to said frame. The frame is moved longitudinally of the rod by means of the lever 49. In the operation of the device, the levers 48 and 49 are grasped by the hands of the operator and are suitably moved to cause the grinder 41 to engage all surfaces of the end of the hub 39 of the wheel 28.

Suitable means are provided for causing the wheel to rotate in order to insure even grinding of the end of the hub. Means are also provided for guiding the wheel during its rotation. As shown in Figs. 1 and 2, of the drawings, means for rotating the wheel comprises a plurality of rollers 51 and 52 having peripheral grooves 53 and 54, in alignment with the lower tracks 27 for engaging the flange 30 of the wheel. In order to cause the wheel to rotate, means are provided for rotating the rollers 51 and 32. As shown the roller 51 is rotated by means of a sprocket 55, which is operated from the power shaft 14 by the flexible drive 56. Roller 52 is rotated by frictional contact with the wheel 28, so arranged that the roller 51 rotates at greatly reduced speed over the power shaft 14, whereby the wheel 28 will be slowly rotated.

Suitable means are provided for guiding the upper portion of the wheel during its rotation. It is necessary that this means be so constructed that the wheel will be held true during its rotation, so that the simultaneous grinding of the flange and the hub may be more or less accurately accomplished. As shown, a roller 57, having a peripheral groove 58, see Fig. 2, for engaging the flange 30 of the wheel 28 is employed for this purpose. The roller 57 is journaled in blocks 60 slidably mounted in a pair of slotted plates 59, at each side of said roller. These plates are rigidly secured to the lever 61 which comprises the lever arms 62 and 63. The blocks 60 are adapted to be adjusted along the plates 59 by means 64 that engage the upper surface. Springs 65 are adapted to hold the block upwardly against the end of the screw 66. The arms 62 and 63 are in parallel relation and are pivoted at their rear ends as at 68. The counterweight 71 is adapted to be attached to the free ends of the lever arms 62 and 63, as by means of the flexible member 68 extending over the pulleys 69 and 71. The parts are so constructed and arranged that the levers or lever arms 62 and 63 will be held in either operative or inoperative position by the counterweight 67.

The mechanism for grinding the flange 30 of the wheel for removing projections and smoothing the periphery of the flange during the hub grinding operation comprises the grinder 72 rotated transversely to the said flange by a motor 73 mounted on the lever arms 62 and 63. The roller 57 constitutes a guide and gauge for the grinder 73. As the grinder wears away or if it is desirable to grind more material from the flange, the lever arms 62 and 63 are lowered by adjusting the blocks 60 by means of the screw 64.

The form of the device shown in Fig. 3 differs from that shown in Figs. 1 and 2 in that means are provided for rotating both of the guide rollers 51 and 52. In this form of the device, the shaft of the roller 52 is driven from the shaft of the roller 51 by gears 74 and 75 on said shafts, meshing with an idler gear 76, which will cause both of said rollers to turn in the same direction.

In the operation of the device, the wheels are placed on the track 27 at the front of the machine with the flange engaging the upper track for holding the wheel in upright position. The wheels roll by gravity along the tracks into engagement with the stop 36 from which by manipulating the stop, they are admitted as required to the brushing station, where they are cleaned by the brushing operation. After the normal cleaning operation, the latch 33 is elevated which permits the wheel to roll onto the rollers 51 and 52 which constitute the grinding station,
where the hub and flange are properly
ground.

After this grinding operation, the lever
arms 61 and 62 are elevated and the wheel
is pushed over the roller 52 onto the track
27 which conducts it away from the ma-

While I have disclosed my device as being
operated by electric motors, it is evident that
the same can be operated by any suitable
power mechanism. This application is a di-
vision of application Ser. No. 3,348 filed Jan-
uary 19, 1928, which has matured in Patent
No. 1,625,137 dated April 19, 1927.

It is thought from the foregoing that, taken
in connection with the accompanying draw-
ings, that the construction and operation of
my device will be apparent to those skilled
in the art, and that various changes in size,
shape, proportion and details of construction
may be made without departing from the
spirit and scope of the appended claims.

I claim as my invention:

1. In combination, wheel holding means, a
pair of tracks for holding a car wheel in
upright position and guiding the same to said
means, said means comprising a pair of
grooved rollers in the plane of said tracks
for supporting said wheel, means for rotat-
ing one of said rollers, a grinder member
associated with one of said tracks, and adap-
ted to be moved into and out of engagement
with the hub of said wheel, and means for
operating said grinder member.

2. In combination, wheel holding means, a
pair of tracks for receiving a flanged wheel
for holding the same in upright position and
guiding the same to said means, means asso-
ciated with one of said tracks for rotating
said wheel, a frame secured and rotatably
secured to the other track, a grinder member
on said frame, and means for rotating said
member.

3. In combination, a wheel support, means
for moving said support for rotating a wheel
thereon, a guide for the upper portion of said
wheel, a movable support for said guide, and
a rotating grinder element mounted on said
support, the axis of said element extending
longitudinally of said guide.

4. In combination, a wheel support com-
prising a pair of grooved rollers for receiv-
ing the flange of a car wheel and for support-
ing said wheel, means for rotating said wheel,
a supporting arm, a grinder element, means
for mounting said grinder element on said
arm, and a guide for said element mounted
on said arm.

5. In combination, a pair of rollers for
supporting a car wheel, means for rotating
said rollers, a supporting bar adjacent to the
side of said rollers, a grinder element, a sup-
port therefore slidably and pivotally mounted
on said bar, the center of gravity of said
element being outwardly of said bar whereby
said grinder element will normally be in in-
operative position, means for rotating said
grinder element, and means for moving said
grinder element into engagement with the hub
of a wheel during its rotation on said rollers.

6. In combination, a wheel support, means
for causing a wheel to rotate while on said
support, a lever pivoted above said support,
a guide on said lever, for engaging the flange
of a wheel while on said support, means for
adjusting said guide relative to said lever, a
grinder and means for mounting said grinder
on said lever for grinding the flange of a
wheel during its rotation on said support, the
axis of said grinder being arranged at an
angle to that of the wheel.

7. In a wheel grinding device, a support,
means for rotating the same, said support
being adapted to support a flanged wheel and
being provided with grooves for receiving the
flange of said wheel, a grooved roller for en-
gaging the flange of said wheel on the upper
portion of said wheel, and means for grinding
the hub and flange of said wheel while the
same is rotated by said support.

8. In a wheel grinder, a wheel support pro-
vided with grooves for receiving the flange
of a flanged wheel, a guide for the upper por-
tion of the flange of said wheel, a pivoted
arm, a grinder on said arm for grinding said
flange, and a counterweight for said arm.

9. In combination, a pair of rollers for sup-
porting a car wheel, means for rotating one
of said rollers for rotating said wheel, means
for grinding the hub of said wheel, a motor
for operating said grinder, a support for said
motor and grinder, a hinge rod on which said
support is rotatably and slidably mounted,
and means for adjusting said motor and
grinder on said rod for grinding said hub.

10. In a wheel grinding device, a frame,
means for supporting a car wheel and hold-
ing the same in upright position within said
frame, means for rotating said wheel while
on said first-named means, a hub grinding
element, a supporting member extending lon-
gitudinally of said frame in a plane trans-
verse to the axis of the wheel hub when on
said first-named means, and means for pivota-
ally and slidably connecting said element to
said member whereby when a wheel hub is
being ground said element may be moved to
and from said hub in a plane parallel with
the axis of the hub and may be slid along
said member in a plane transversely thereto,
the center of gravity of said hub grinding
element being outwardly of said supporting
member whereby said element will be nor-

In testimony whereof I affix my signature.

D. C. MULVIHILL