

No. 822,656.

PATENTED JUNE 5, 1906.

J. T. DUFF.
GRINDING OR POLISHING MACHINE.

APPLICATION FILED JUNE 24, 1905.

4 SHEETS—SHEET 1.

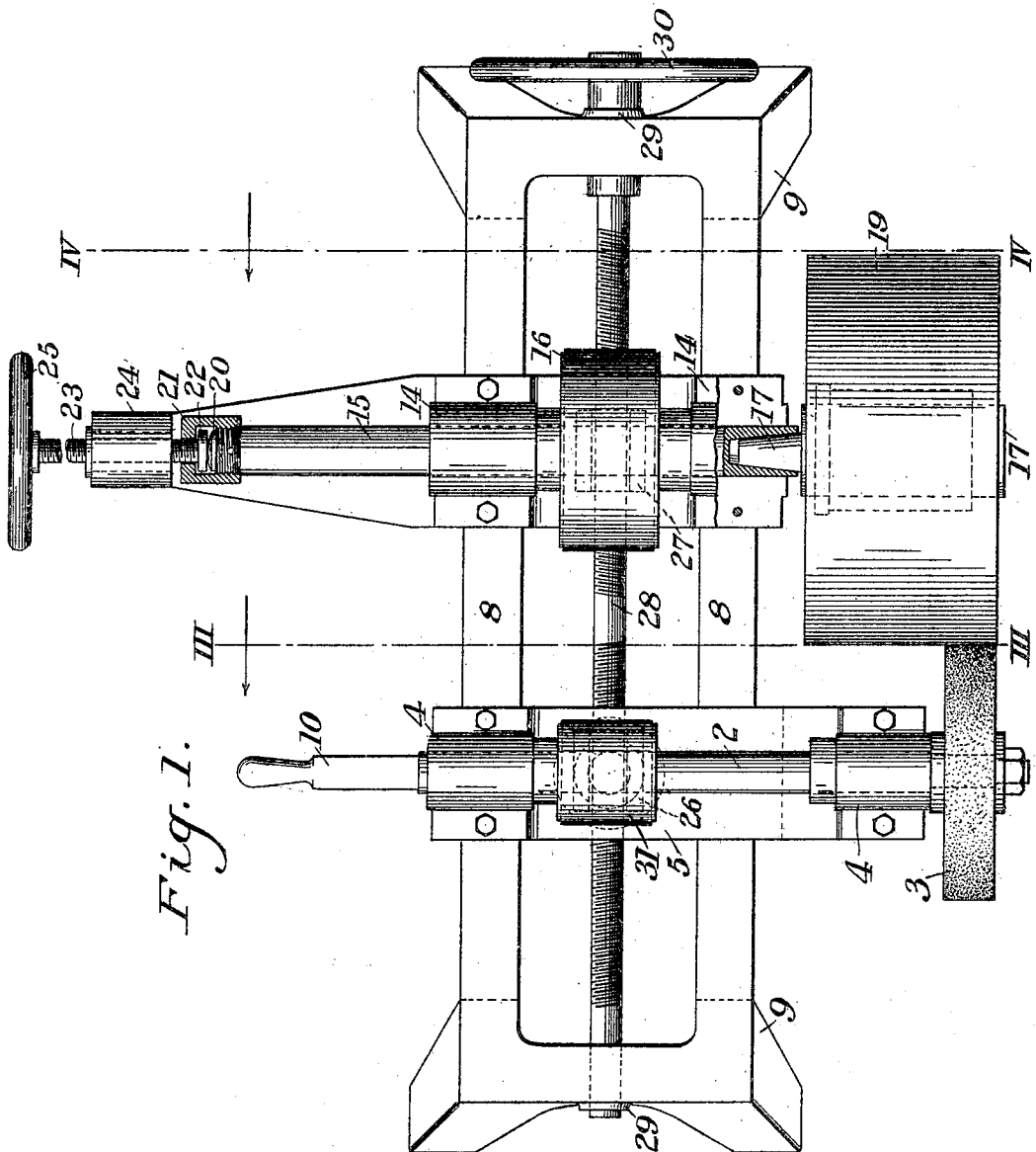


Fig. 1.

WITNESSES

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Warren W. Swartz.

INVENTOR

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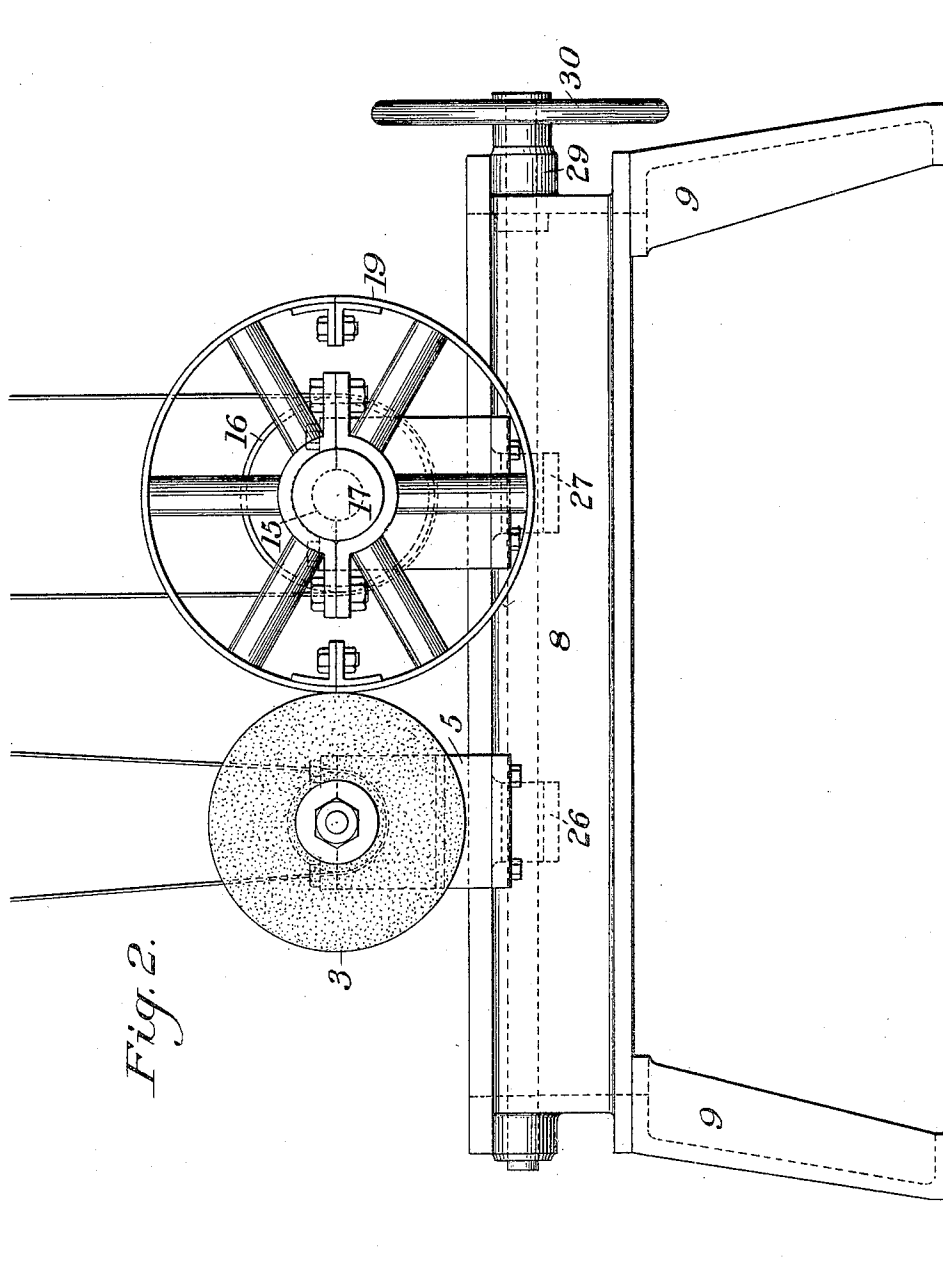


Fig. 2.

WITNESSES

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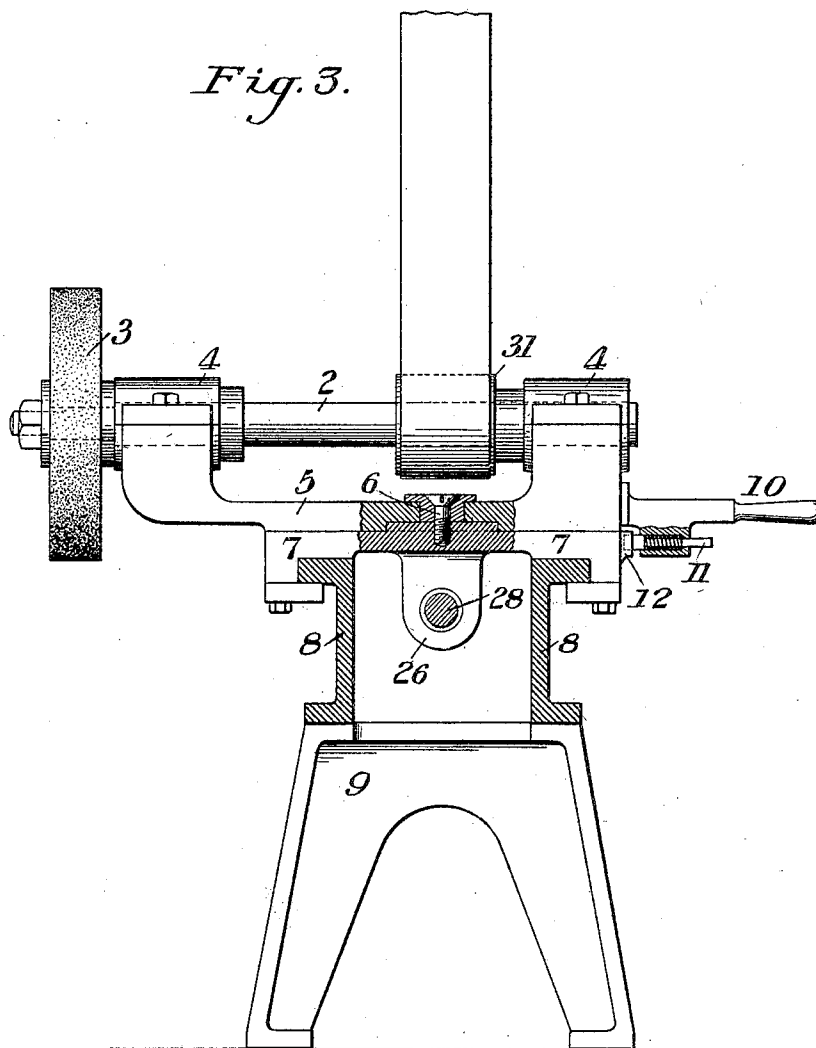
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4 SHEETS—SHEET 3.

Fig. 3.



WITNESSES

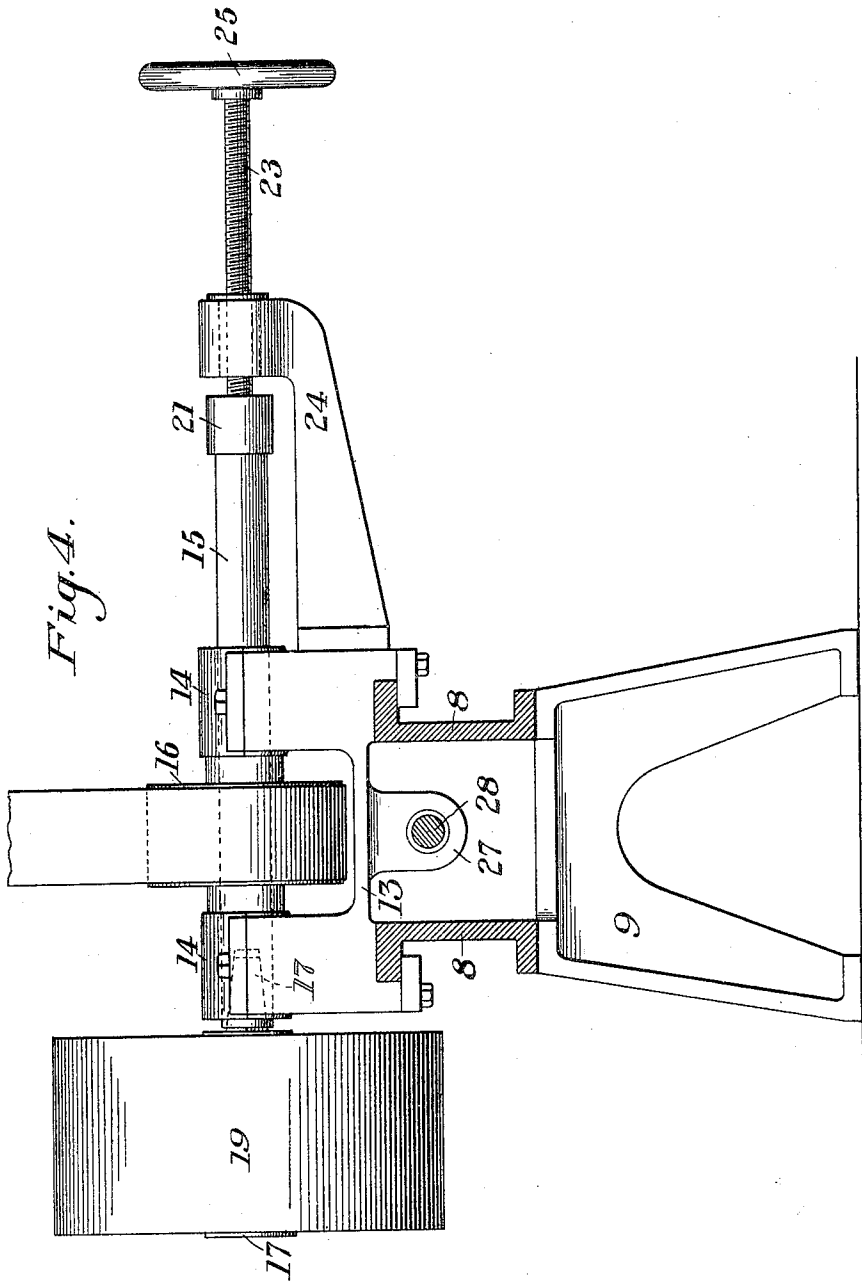
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4 SHEETS—SHEET 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN T. DUFF, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR OF ONE-HALF
TO JOSEPH McNAUGHER, OF ALLEGHENY, PENNSYLVANIA.

GRINDING OR POLISHING MACHINE.

No. 822,656.

Specification of Letters Patent.

Patented June 5, 1906.

Application filed June 24, 1905. Serial No. 266,699.

To all whom it may concern:

Be it known that I, JOHN T. DUFF, of
Pittsburg, Allegheny county, Pennsylvania,
have invented a new and useful Grinding or
Polishing Machine, of which the following is
a full, clear, and exact description, reference
being had to the accompanying drawings,
forming part of this specification, in which—

Figure 1 is a top plan view of my improved
grinding or polishing machine. Fig. 2 is a
front elevation of the same. Fig. 3 is a cross-
section on the line III III of Fig. 1 looking
toward the left, and Fig. 4 is a section similar
to Fig. 3 on the line IV IV of Fig. 1.

My invention relates to the grinding or
polishing of the rims of pulleys, wheels, &c.,
and is designed to provide improved apparatus
by which this operation may be rapidly and
cheaply carried out.

In the drawings, 2 represents a shaft carry-
ing at its end a polishing or grinding disk 3.
The shaft 2 is mounted in bearings 4 4, car-
ried on a turning base-plate 5, which is piv-
oted to the vertical pin 6. The plate 5 is
mounted upon the slide 7, which may be ad-
justed along the longitudinal open frame of
the machine, having the flanged side mem-
bers 8 8 resting on the supporting members
9. The plate 5 may be turned by the pro-
jecting handle 10, having a spring-pressed
catch 11 engaging notches or ratchet-teeth
in a segment-plate 12. The plate 5 may thus
be turned and adjusted to any desired angu-
lar position in the manner of a turret, this
being held in the adjusted position by the
latch or catch. On the same frame members
8 8 is another slide 13, having bearings 14,
carrying a shaft 15, to which is secured a
large driving-pulley 16. The outer end of
this shaft is shaped to receive removable
mandrels 17. In the form shown the man-
drel is tapered at its inner end and is driven
into corresponding recesses in the end of the
shaft which is provided with an open slot,
through which the mandrel may be driven
out. The pulley 19 to be ground is secured
to the mandrel, which is then driven into the
shaft 15.

The rear end of the shaft 15 is rounded and
preferably provided with a rounded friction-
plate 20, a cap 21 being screwed to this end
of the shaft. Within this cap fits the enlarged
end portion 22 of a screw-shaft 23, fitting
within a screw-threaded hole in the arm 24.

The shaft 23 terminates in hand-wheel 25, 55
by means of which the shaft 15 may be
moved endwise in either direction to move
the face of the pulley across the grinding-
wheel, and thus bring the different parts of
its face into the position to be ground or 60
polished.

In order to adjust the grinding-wheel and
pulley toward or from each other, and thus
enable the apparatus to be used for different
sizes of pulleys or wheels, I preferably pro- 65
vide the slides 7 and 14 with depending ears
26 and 27, which are provided with right and
left hand screw-threads, respectively. A lon-
gitudinal shaft 28 extends through the end
portions 29 of the frame members 8 and is pro- 70
vided with a hand-hole 30. The shaft 28 is
provided with a right and left hand screw-
threads engaging the correspondingly screw-
threaded holes in the ears or lugs 26 and 27 of
the two slides, and by turning the hand-wheel 75
the slides may be simultaneously moved to-
ward or from each other. I can thus adjust
the shafts to correspond to different sizes of
pulleys or wheels to be ground. The grinding-
wheel shaft 2 is provided with a pulley 31, 80
which is preferably smaller than the corre-
sponding pulley on the mandrel-shaft, so that
the grinding or polishing wheel may be driven
at a considerably-higher speed than that of
the pulley. I preferably drive the pulley in 85
the same direction as the grinding-wheel, the
direction being clockwise for both looking at
Fig. 2.

In the use of the apparatus the pulley is
placed on the mandrel and the mandrel is 90
driven in or secured to the shaft 15. Both
the mandrel-shaft and the grinding-wheel
shaft are then rotated, the grinding-wheel be-
ing driven, preferably, at high speed. As
the pulley rotates its surface is ground, and 95
during this grinding action the pulley is
moved endwise by means of the hand-wheel
25, so as to bring the different portions of its
rim into contact with the grinding or polish-
ing disk. The width of the polishing-disk is 100
therefore independent of the width of the
rim, and with rims of different widths their
different portions may be brought into en-
gagement with the grinding-disk.

The advantages of my invention result 105
from the simple and efficient apparatus
which will rapidly grind the outer face of pul-
leys or wheels having different diameters and

of different widths of rim, also from the manner in which any desired angle of adjustment may be given the grinding-wheel whereby pulleys having different forms of crowned surfaces may be accurately and rapidly ground.

In grinding pulleys with a crown-face or a ridge at the center I adjust the grinding-wheel carrier and its turret to the proper angle, and by thus adjusting the angular position of the wheel and moving the pulley endwise along the bed I can give any desired shape to the outer face of the rim.

Instead of adjusting the mandrel-shaft endwise I may adjust the grinding-wheel endwise to bring it to the different portions of the pulley. The means for connecting the pulley and the rotary shaft may be varied, and many other changes may be made in the form and arrangement of the parts without departing from my invention.

I claim—

1. In a rim grinding or polishing machine, a rotary rim-carrying shaft, a rotary grinding or polishing wheel, and means for moving one of said parts endwise and angularly relative to the other to bring the grinding-wheel into contact with the different parts of the rim-face; substantially as described.

2. In a rim grinding or polishing machine, a shaft having a grinding-wheel, a shaft arranged to carry the rim or pulley, and means for adjusting both shafts toward or from each other to provide for pulleys of different sizes; substantially as described.

3. In a rim grinding or polishing machine, a shaft carrying a grinding-wheel, a shaft arranged to support the pulley or rim, and means for turning the support for the grinding-shaft bearings to different angular positions; substantially as described.

4. In a rim grinding or polishing machine, a shaft having a grinding-wheel, a shaft substantially parallel thereto to carry the pulley to be drawn, means for adjusting one shaft endwise and angularly relative to the other, and means for adjusting at least one of said shafts toward and from each other; substantially as described.

5. In a rim grinding or polishing machine, a grinding-wheel, a shaft arranged to carry the pulley to be ground, means for rotating both the wheel and the shaft, and means for effecting a simultaneous adjustment of said wheel and shaft toward and away from each other; substantially as described.

6. In a rim grinding or polishing machine, a shaft carrying a grinding-wheel, a turret-carrier for said shaft, and a slide supporting the turret-carrier; substantially as described.

7. In a rim grinding or polishing machine, an endwise-movable shaft arranged to carry the pulley to be ground, a friction-plate at the end of said shaft and an adjusting device bearing against said friction-plate; substantially as described.

8. In a rim grinding or polishing machine, a bed-frame, a pair of slides movable along said frame, means for simultaneously adjusting said slides toward and from each other, a grinding or polishing disk having a shaft mounted on one of the slides, a pulley-supporting shaft mounted on the other slide, and means for adjusting one of said shafts endwise to bring the different parts of the pulley-face in contact with the grinding or polishing disk; substantially as described.

9. In a rim grinding or polishing machine, a grinding-wheel shaft, a shaft arranged to carry the pulley to be ground, movable bearings for both shafts, and a double-threaded adjusting-screw for actuating said movable bearings whereby the two shafts may be simultaneously moved toward and away from each other; substantially as described.

10. In a rim grinding or polishing machine, the combination with an endwise-movable shaft arranged to carry the pulley to be ground; of a grinding-wheel carrying-shaft and a rotary support for said shaft; substantially as described.

In testimony whereof I have hereunto set my hand.

JOHN T. DUFF.

Witnesses:

GEO. B. BLEMING,
H. M. CORWIN.