

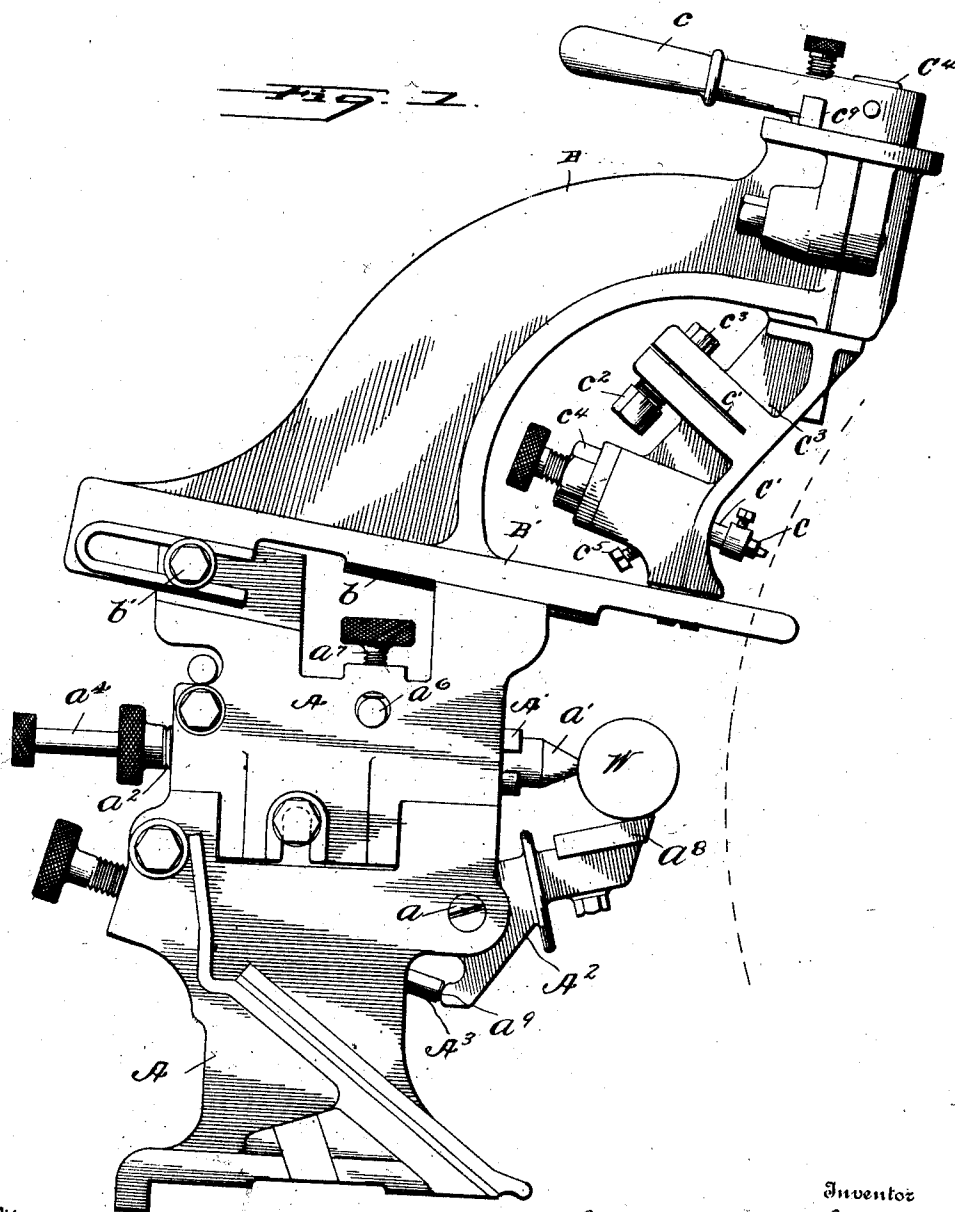
No. 883,650.

PATENTED MAR. 31, 1908.

A. B. LANDIS.
GRINDING WHEEL TRUER FOR GRINDING MACHINES.

APPLICATION FILED MAY 8, 1908.

3 SHEETS—SHEET 1.



Witnesses

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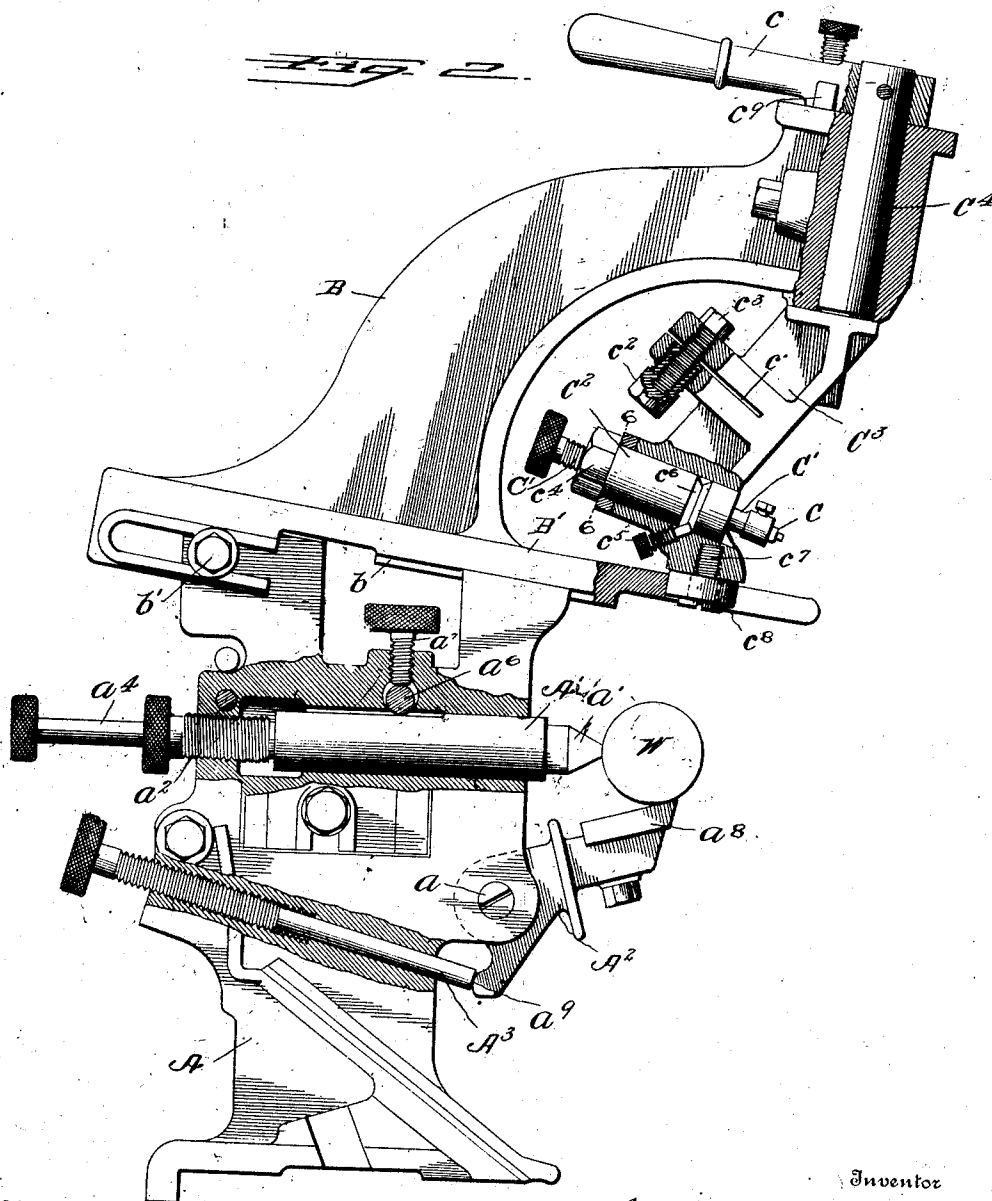
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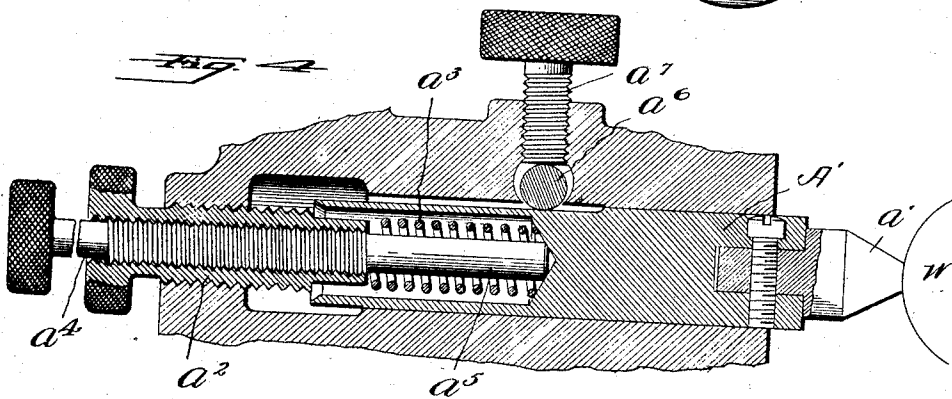
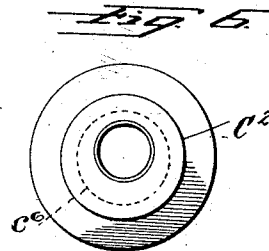
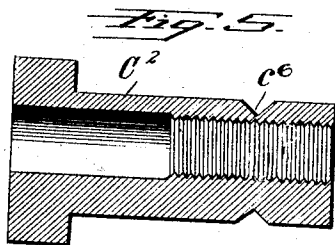
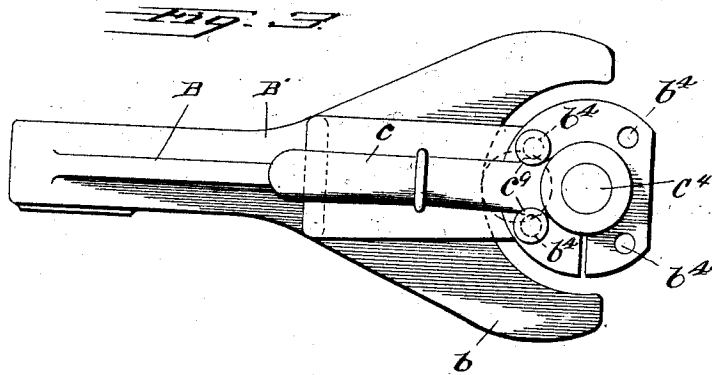
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3 SHEETS—SHEET 3



Witnesses.

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UNITED STATES PATENT OFFICE.

ABRAHAM B. LANDIS, OF WAYNESBORO, PENNSYLVANIA.

GRINDING-WHEEL TRUER FOR GRINDING-MACHINES.

No. 883,650.

Specification of Letters Patent.

Patented March 31, 1908.

Application filed May 8, 1906. Serial No. 315,775.

To all whom it may concern:

Be it known that I, ABRAHAM B. LANDIS, a citizen of the United States, residing at Waynesboro, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Grinding-Wheel Truers for Grinding-Machines, of which the following is a specification.

In the use of grinding machines for grinding parts having rounded corners, such as journals and crank-shafts with shoulders at one or both ends, it is necessary to have the corners of the grinding wheel rounded to conform to the shape of the corner to be ground and to keep the face and corners of said wheel properly dressed in order that perfect results may be secured.

My present invention is more particularly designed for truing the grinding wheel when used for grinding the wrist or crank-pins of crank-shafts for engines, in which the shafts and wrist are in one piece and said cranks are frequently in multiple. As each wrist must be supported by a separate rest and it being undesirable to remove said wrist from the machines and the grinding-wheel away from the point of rest of the wrist-pin, it becomes desirable to mount said truing device upon the wrist itself.

My said invention consists, therefore, in the construction and arrangement of parts whereby a work-rest and diamonding tool are combined to enable these results to be accomplished, all as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings which are made a part hereof and on which similar reference characters indicate similar parts, Figure 1 is a side elevation of a combined work rest and diamonding tool embodying my said invention, Fig. 2 a similar view with parts shown in section to more clearly illustrate the construction, Fig. 3 a top or plan view, Fig. 4 a section to one of the work rests, Fig. 5 a detailed section through the holder for the diamond tool, and Fig. 6 an end elevation thereof as on dotted line 6-6 in Fig. 2.

In said drawings the portions marked A represent the base or frame of the work rest proper, B the frame of the diamonding tool and C the diamonding tool.

The frame A is formed to be mounted upon the work holding table of the grinding machine and secured in the usual manner and of appropriate form to support the other parts

of the mechanism. Its top is preferably inclined as shown, and provided with a groove or way in which a tongue or rib *b* on the under face of the frame B is mounted.

The frame B is of appropriate form to support the diamonding tool and is mounted upon the top of said frame A, as just described, being secured in the desired longitudinal adjustment on said frame A by means of clamping bolts *b'* passing through slots in depending flanges on the sides of said frame B and engaging with screw-threaded perforations in the upper end of said frame A, being thus adapted to clamp said flanges between the heads of said bolts and the adjacent faces of said frame.

The work rest proper comprises a block A having a point *a'* in its outer end of appropriate material to bear against the work. Said block is mounted in a horizontal perforation in the base or frame A directly behind the axis of the work and is formed with a socket in its rear end. A screw-threaded sleeve *a²* is mounted in a screw-threaded perforation in the opposite side of frame A and is adapted to extend to within said socket. A coiled-spring *a³* is interposed between the end of said sleeve *a²* and the inner end of the socket in said part A'. By this means the work rest may be held yieldingly to the work and the tension of the spring *a³* may be adjusted as desired by adjusting said sleeve *a²*, as will be readily understood. Said sleeve *a²* is internally screw-threaded and a screw rod *a⁴* is mounted therein with its inner end *a⁵* extending through the coiled spring *a³* and adapted, when properly adjusted, to rest against the inner end of the socket in the part A'. By this means, said part A' may be held unyieldingly to the work, when desired, by adjusting said screw *a⁴* to bring the end *a⁵* into position to take the thrust of said part A' off the spring *a³*. A flat portion is formed on the upper side of part A' and a cross-bar *a⁶* mounted in a transverse perforation in the frame A is adapted to rest thereon and a set-screw *a⁷* is mounted upon said cross-bar with its lower end adapted to impinge against its upper side and hold it firmly clamped to the part A'. By forcing said set-screw *a⁷* downwardly, said roller *a⁶* may be made to impinge tightly upon said part A' and thus aid in locking it against motion or vibration. The rest for the underside of the work W comprise an arm A⁸ mounted on a pivot *a* in a suitable recess in the front of the frame A,

having a block a^8 on its upper end of suitable material to bear against the work and an arm a^9 projecting downwardly from the pivot into position to rest against the inner end of a screw-rod A^3 mounted in a transverse screw-threaded perforation extending through the base or frame A. By adjusting said screw-rod said pivoted arm may be raised or lowered to raise or lower the bearing block a^8 as will be readily understood. By this arrangement a work rest is provided which may be adjusted to suit work of any size and may be quickly and conveniently made either a yielding or a fixed rest, as desired. The base-plate B' of frame B is formed with a wide forward end between the sides b of which is formed a segmental track to afford a support for the lower end of the diamond-tool frame.

The diamond tool C is, in itself, of any appropriate construction consisting of the diamond mounted in a suitable head which is supported in a shank C' , which shank is mounted eccentrically in a sleeve or bushing C^2 in a transverse bearing formed or mounted on the lower end of a spindle C^4 , which is mounted in a vertical bearing in the forward end of the over-hanging arm of the frame B. The upper end of said spindle C^4 is provided with a lever c by which it may be adjusted or turned as desired. Said frame C^3 is preferably formed with an intermediate cut c' having a flange or arm on each side thereof and secured together by means of an adjusting screw c^2 mounted in a screw-threaded perforation in one arm and another adjusting screw c^3 mounted in a screw-threaded perforation in the other arm and extending to within a screw-threaded perforation in said screw c^2 in the other arm. By this means a slight variation in the alinement of arm C^3 may be secured by springing it one way or the other through the operation of said screws, as will be readily understood. The spindle C' is screw-threaded in the sleeve C^2 and is locked in the desired longitudinal adjustment by means of a jam-nut c^4 . Said sleeve is locked in the desired circumferential adjustment by means of a set-screw c^5 mounted in the lower end of the frame C^3 and adapted to impinge at its inner end in a circumferential groove c^6 in said sleeve. By this means said sleeve may be rotated to bring the diamond point directly in line with the axis of the spindle C^4 , as will be readily seen. In the lower end of arm C^3 is mounted a stud c^7 on which is journaled an anti-friction roller c^8 which is adapted to travel on the segmental track formed in the front end of the lower plate B' of the frame B. The lower end of said arm C^3 is thus firmly and rigidly supported against the thrust of the grinding wheel.

In operation, the grinding wheel to be dressed is moved back and forth across the

diamond from one side to the other and at the corners the tool is swung on its pivot C^4 by means of the lever c to dress off the corner of the wheel of such a curve as may be required by the character of the work it is to perform. When not in use the clamping bolts b' may be released and the frame B slid back on the top of the frame A until said tool will be entirely out of the way of the work. Or, it may be removed entirely from the work rest in the case of grinding crank-wrists in order to have the crank escape the projections b . When used for dressing straight faces with square corners the tool may be locked in position with its point at right angles with the surface being dressed by pins c^9 which are inserted in perforations b^4 and bear against faces formed on the side of lever c . When the sides of the wheel are to be dressed back from its face the tool is set in a position at right angles with that shown in Figs. 1 and 2 and locked by placing the pins c^9 in the appropriate holes b^4 .

Having thus fully described my said invention, what I claim as new and desire to secure by Letters Patent, is:—

1. The combination, with a grinding machine, of a tool for dressing the grinding wheel comprising a supporting frame, a pivoted frame mounted to swivel in said supporting frame, a diamond tool mounted in said pivoted frame in position to operate upon the face of the grinding wheel, the upper end of said frame being mounted in an overhanging support and its lower end supported by bearing upon a track behind the line of its axis, substantially as set forth.

2. The combination, with a grinding machine, of a work-rest mounted upon the work supporting table, a supporting frame mounted upon the top of said work rest formed with its upper end overhanging its lower portion, a frame journaled at its upper end in a bearing in said overhanging part and having its lower end formed to extend behind the axis of its journal and having a roller journaled on said lower end adapted to bear on a segmental track on said frame, and a diamond tool mounted in said frame, substantially as set forth.

3. In a machine for dressing the grinding surfaces of the grinding wheels of grinding machines, the combination of an overhanging frame or support suitably mounted adjacent to said grinding wheel, a frame carrying the diamond tool journaled at its upper end in said overhanging frame and supported at its lower end by a segmental track behind the axis of the journal, said diamond tool eccentrically mounted in a rotary sleeve or bushing and means for adjusting said sleeve or bushing circumferentially, and securing it as desired, substantially as set forth.

4. In a diamond tool for dressing the faces of grinding wheels, the combination of a sup-

porting frame comprising an overhanging part, a diamond carrying frame journaled at its upper end in a bearing in said overhanging part and its lower end supported by a segmental track behind the axis of said overhanging part, said frame being made of a somewhat flexible structure, and means for deflecting its alinement, substantially as set forth.

5. In a diamond tool, the combination of a supporting frame, comprising an overhanging part, a frame carrying a diamond tool journaled in said overhanging part, said diamond tool being mounted upon a suitable screw-threaded stem mounted eccentrically in a sleeve or bushing in the lower end of said frame and means for adjusting said sleeve or bushing circumferentially and securing it in adjusted position, substantially as set forth.

6. In a diamond tool for dressing grinding wheels, the combination of a supporting frame, a frame for carrying a diamond tool swiveled in said supporting frame, means for locking said frame to hold the point of a diamond in fixed relation to the face being

dressed, and a lever for rotating said frame on its axis to carry said tool through the arc of a circle, substantially as set forth.

7. In a diamond tool for dressing grinding wheel surfaces, the combination, of a supporting frame mounted on a grinding machine table, said supporting frame comprising an overhanging part, a frame for carrying a diamond journaled at its upper end in a bearing in said overhanging part and provided with a lever for swiveling it back and forth, means for locking it in fixed position, an anti-friction roller on the lower end of said frame behind the axis of said journal, and a segmental track on the supporting frame against which said anti-friction roller bears, substantially as set forth.

In witness whereof, I, have hereunto set my hand and seal at Waynesboro, Pennsylvania, this 30th day of April, A. D. nineteen hundred and six.

ABRAHAM B. LANDIS. [L. s.]

Witnesses:

MERTA RUSSELL,
ALF. N. RUSSELL.