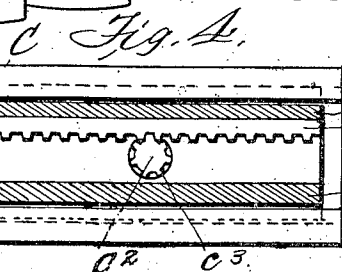
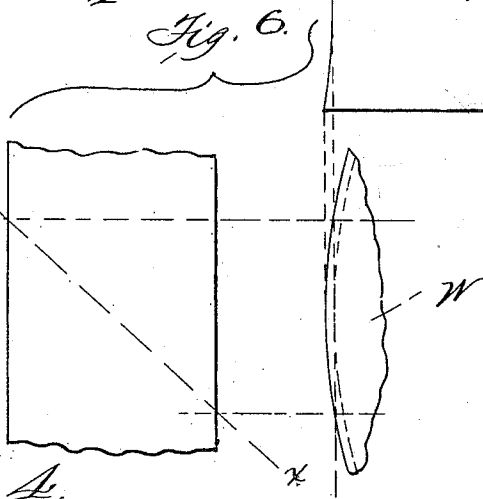
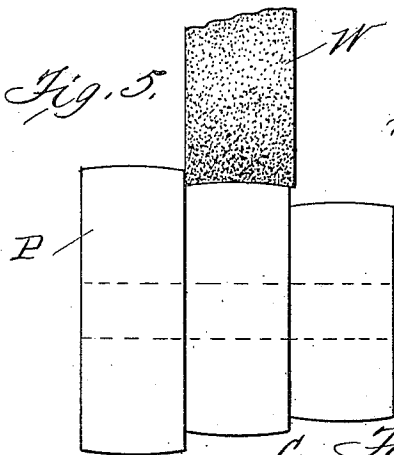
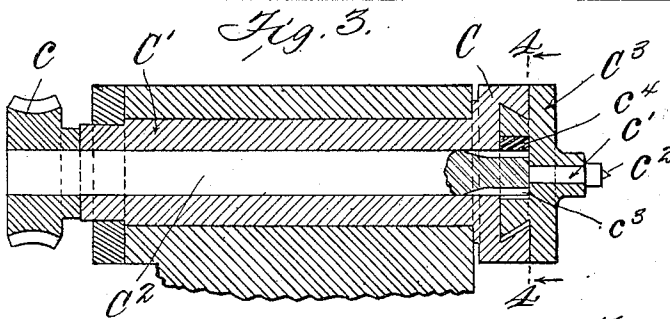
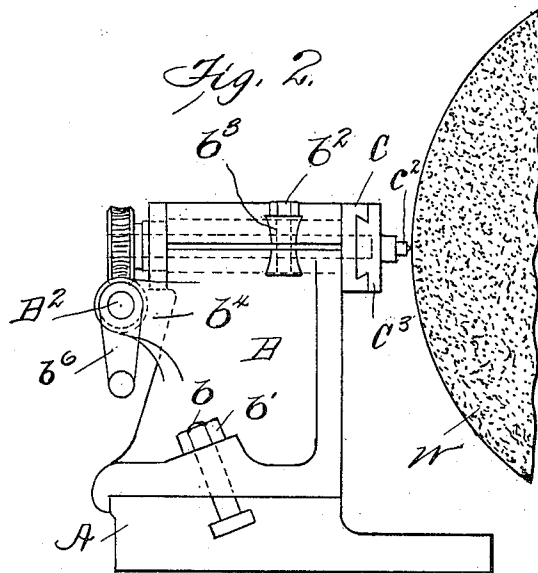
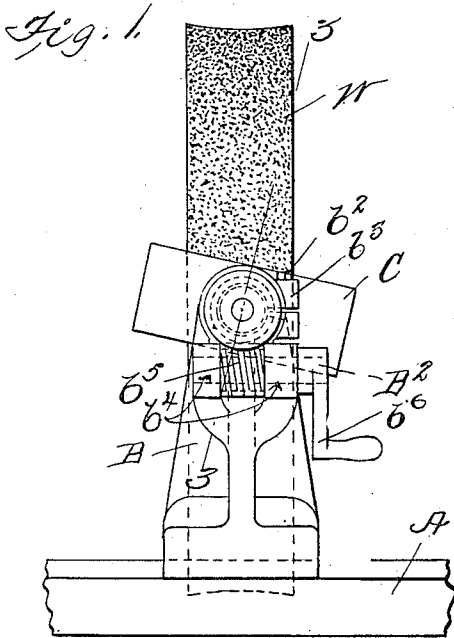


A. B. LANDIS.
 DIAMONDING TOOL FOR GRINDING MACHINES.
 APPLICATION FILED APR. 19, 1907.

945,466.

Patented Jan. 4, 1910.



WITNESSES:
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DIAMONDING-TOOL FOR GRINDING-MACHINES.

945,466.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed April 19, 1907. Serial No. 369,147.

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 Diamonding-Tools for Grinding-Machines, of which the following is a specification.

My said invention consists in an improved construction and arrangement of parts of an apparatus for holding and operating the tool for dressing the faces of grinding wheels, such as are used in grinding machines, the device being what is known to the trade as a "diamonding tool", whereby such a tool is provided capable of dressing the face of the grinding wheel either parallel with its axis or of any curve desired, 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 rear elevation of my improved apparatus for holding and operating the diamonding tool in operative position on the bed of the grinding machine, including a face view of a grinding wheel in position to be operated upon, Fig. 2 a side elevation of the same, Fig. 3 a sectional view on the dotted line 3—3 in Fig. 1, Fig. 4 a detail section on the dotted line 4—4 in Fig. 3, and Figs. 5 and 6 diagrammatic views illustrating the particular character of work for which this diamonding tool is especially adapted to dress the grinding wheel to do and the method of operation.

In said drawings the portions marked A represent the work supporting table of a grinding machine bed, B the stand upon which the diamonding tool is mounted, and C the frame of said diamonding tool. The table A of the grinding machine bed is of the usual or any approved construction and needs no special description.

The stand B is a casting of suitable form secured on the table A by a clamping bolt b the head of which engages with a T-slot in the face of said table and the outer end of which is screw-threaded and provided with a nut b' , this being the common method of securing said stands, as well as the head-stock and foot-stock to the work supporting table of a grinding machine. On the upper end of said stand is formed a bearing which extends at right angles across the table of the

machine, such bearing being split on one side, the two parts being connected by a clamping screw b^2 which extends through an ear b^3 on one part and into a screw-threaded perforation in the other part, as shown. See Figs. 1 and 2.

The frame C consists of a bar formed (or otherwise mounted) on the forward end of a sleeve C' , which sleeve is mounted and clamped in the bearing on the upper end of the stand B. Said bar C has a way, preferably of dove-tailed formation in its front face. A shaft C^2 is journaled in said sleeve having a worm gear wheel c on its outer end and a pinion c^3 at its inner end. A traversing block or carriage C^3 with a dovetail shaped flange on its inner face adapted to fit and run in the way in the outer face of the bar C is mounted in said way and has a pin c' firmly seated therein in the outer end or head of which is set the diamond c^2 , or dressing tool, used for dressing the face of the grinding wheel. Said carriage C^3 is grooved longitudinally to receive a rack-bar c^4 which is set therein on one side thereof and with which the pinion c^3 of shaft C^2 engages. See Figs. 3 and 4.

A crank-shaft B^2 is mounted in bearings formed in projecting ears b^4 on the rear side of the stand B and has a worm gear b^5 adapted to engage with the worm gear-wheel c on the shaft C^2 .

In operation, it being desired to grind the face of the grinding wheel W concave, or of the form shown most plainly in Figs. 1 and 5, in order to adapt it to grind the faces of pulleys P, of such form as shown in Fig. 5, the frame C will be tilted as shown in Fig. 1 so that the diamonding tool in being traversed across the face of the wheel will travel at an angle such as is indicated by the dotted line 3—3 in Fig. 1, or $x-x$ in Fig. 6, and across the line of the axis of the wheel, which, as will be readily understood and as clearly illustrated in Fig. 6, will produce a true curve in the face of said wheel which curve may be increased or diminished as desired by varying the angle of the frame C which can be done readily by loosening the clamping screw b and turning the sleeve C^3 to secure the desired angle and again securing it. When it is desired to grind a square face the frame C will be set horizontal as shown in Fig. 2. The grinding wheel being in rapid rotation the operator by means of

the crank b^6 turns the crank-shaft B^2 , which, through the gear connection above described, operates to slide the carriage on block C^3 in the way in bar C. When said carriage has been traversed to bring the diamond c^2 to one edge of the wheel W the motion of crank b^6 is reversed and said carriage is traversed to bring said diamond to the other edge of the wheel. Said wheel is fed to the tool by the mechanism employed for feeding it to the work, such as is common in my type of grinding machines and shown in many of my former patents.

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

1. A diamonding tool for grinding machines comprising a stand adapted to be secured upon the grinding machine table, a frame mounted to tilt transversely on said stand, a traversing carriage mounted on said frame, and the dressing tool mounted on said carriage, substantially as set forth.

2. In a diamonding tool for grinding machines, the combination, of the stand adapted to be secured on the table of the grinding machine bed, a transversely extending frame mounted on a sleeve adjustably secured on said stand and having a transverse way formed therein, said sleeve, a traversing carriage mounted in said way, means for traversing said carriage back and forth, and a part carrying the diamond suitably mounted on said carriage, substantially as set forth.

3. In a diamonding tool, the combination, of the stand, the tilting frame mounted on said stand and provided with a transverse way, a traversing carriage mounted in said way in said frame, a rack-bar secured in said carriage, a shaft having a pinion on its forward

end engaging said rack-bar and mounted in a bearing extending through the top of said frame, said bearing, a gear on the rear end of said shaft, and a crank-shaft mounted on said stand and having a gear meshing with the gear of said shaft for operating the same, substantially as set forth.

4. In a diamonding tool for dressing the faces of grinding wheels of grinding machines, the combination, of the supporting frame mounted to tilt around an axis at right angles with the axis of the work and in line with the center of said work, the traversing carriage carrying the dressing tool mounted in said frame, means for traversing said carriage, and means for adjusting the angle of the frame, substantially as set forth.

5. A diamonding tool for dressing the faces of grinding wheels comprising a traversing carriage carrying the dressing tool arranged to traverse in a diagonal direction across the face of the wheel while in rotation, and means for traversing said carriage, substantially as set forth.

6. A diamonding tool for grinding machines comprising a support, a carriage bearing the dressing tool, said dressing tool mounted on said support to traverse across the face of the grinding wheel, means for traversing said carriage and means for regulating the angle of the traversing movement, substantially as set forth.

In witness whereof, I have hereunto set my hand and seal at Waynesboro, Pa., this 13th day of April, A. D. nineteen hundred and seven.

ABRAHAM B. LANDIS. [I. S.]

Witnesses:

SHERMAN A. MILLER.

GEORGE H. DICKEL.