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CRANK PIN TURNING ATTACHMENT FOR LATHES.
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CRANK-PIN-TURNING ATTACHMENT FOR LATHES.


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To all whom it may concern:

Be it known that we, ADAM TINDEL and OTTO ALBRECHT, citizens of the United States, and residents of Philadelphia, Pennsylvania, have invented certain Improvements in Crank-Pin-Turning Attachments for Lathes, of which the following is a specification.

The object of our invention is to provide means whereby an ordinary turning-lathe may be readily adapted for turning crank-pins or eccentrics—an object which we attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a side view, partly in section, of the parts comprising our invention. Fig. 2 is a top or plan view of the same. Fig. 3 is a section on the line a a, Fig. 2; and Fig. 4 is a side view illustrating a special feature of our invention.

As represented in Fig. 1, the attachment comprises two face-plates 1 and 2, the face-plate 1 being intended for application to the lathe-mandrel in place of the ordinary face-plate and being provided with a spur-gear 3, whereby it may be rotated by the gearing of the lathe. The face-plate 2 is mounted so as to be free to turn upon a sleeve 4, which is mounted so as to be incapable of turning upon the tail-stock or dead-spindle 6 of the lathe, a clamp-ring 6 being secured to said sleeve and engaging with a groove in the hub of the face-plate 2, so as to retain the latter in position longitudinally. Each of the face-plates carries a set of crank-shaft chucking and gripping devices, and as these devices are the same on each face-plate a description of one set will suffice. The face-plate has dovetailed grooves 7 and 8 crossing each other at right angles, the groove 7 serving as a guide for the shaft-chucking device and the groove 8 serving as a guide for a pair of crank-arm-clamping jaws.

The chucking device comprises a slide 9, having a dovetailed rib for engagement with the dovetailed groove 7, and also having a nut 10 for engagement with an adjusting-screw 11, which is confined longitudinally to a suitable stud on the face-plate, so that by turning said screw the chuck-slide can be caused to move toward or from the center of the face-plate. Secured to or forming part of the slide 9 is the fixed jaw 12 of the chuck, which is slotted for the reception of a pair of clamp-bolts 13, said bolts being adapted to like slots in the movable jaw 14 of the chuck, so that by manipulating nuts 15 on said bolts the chuck-jaws can be caused to securely clamp the crank-shaft, as shown by dotted lines in Figs. 2 and 3, the radial position of the chuck-slide 9 on the face-plate being dependent upon the throw of the crank, it being understood that the axial line of the crank-pin is coincident with the axis of the face-plate.

The groove 8 of the face-plate receives dovetailed ribs upon a pair of slides 16, each of which has a projecting arm 17, forming a clamp-jaw for engagement with an arm of the crank, the slides being caused to approach and recede from the axis of the face-plate by means of a screw-stem 18, which is longitudinally confined to a stud 19 on the face-plate, and has a right-hand threaded portion for engagement with a nut 20 on one of the slides 16 and a left-hand threaded portion for engagement with a similar nut on the other slide 16.

The outer ends of the arms 17 have openings for the reception of a transverse bolt 21, which is provided with a nut 22. Hence when the slides 16 have been adjusted to such positions as to cause the clamp-jaws at the outer ends of the arms 17 to bear upon the arms of the crank, as shown in Figs. 1 and 2, said jaws may be caused to firmly grip the crank-arms by tightening the nuts 22, a much firmer hold upon the crank-arm being thus insured than if reliance were placed wholly upon the inward movement of the slides 16 under the action of the screw-stem 18 for effecting this result.

The construction described provides a simple and convenient attachment whereby an ordinary turning-lathe can be readily adapted for the turning of crank-pins.

If desired, the chuck-slide 9 may be provided with a center pin 23, as shown in Fig. 4, and the chuck may be adjusted so as to serve as a center chuck for the lathe.

We have shown the device as applied to a shaft having a single crank; but it will be evident that it can be applied as well to shafts having a series of cranks.
Having thus described our invention, we claim and desire to secure by Letters Patent—

1. The combination of a lathe cross-head with means for chucking a crank-shaft, and a pair of adjustable slides each having a projecting arm forming a clamp-jaw for engaging with a crank-arm of said shaft, substantially as specified.

2. The combination of a lathe face-plate with a radially-adjustable chucking device for a crank-shaft, and a pair of adjustable slides each having a projecting arm forming a clamp-jaw for engaging with a crank-arm of said shaft, substantially as specified.

3. The combination of a lathe face-plate with means for chucking a crank-shaft, a pair of adjustable slides each having a projecting arm forming a clamp-jaw for engaging with a crank-arm of said shaft, and a clamping-bolt whereby the outer ends of said arms may be drawn together, substantially as specified.

4. The combination in a crank-pin-turning attachment for lathes, of a positively-rotated face-plate and a face-plate mounted so as to be free to turn on the tail-stock, or dead-spindle of the lathe, with shaft-chucking mechanism, and pairs of adjustable crank-arm-gripping jaws, one pair on each of said face-plates, substantially as specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ADAM TINDEL.

OTTO ALBRECHT.

Witnesses:

FRANK E. BECHTOLD,

JOS. H. KLEIN.