

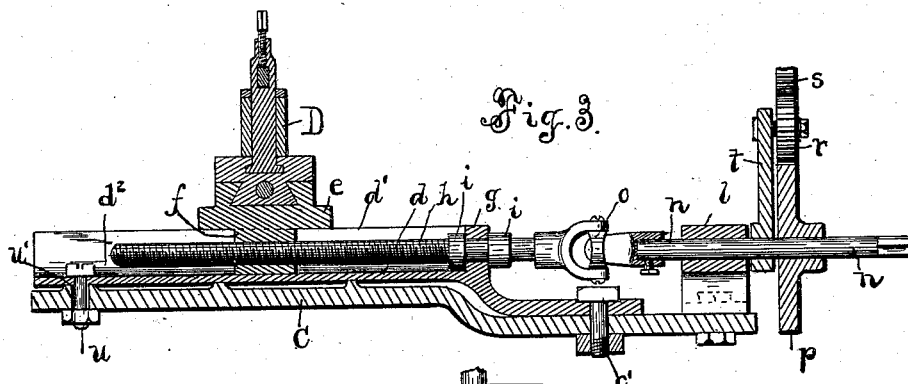
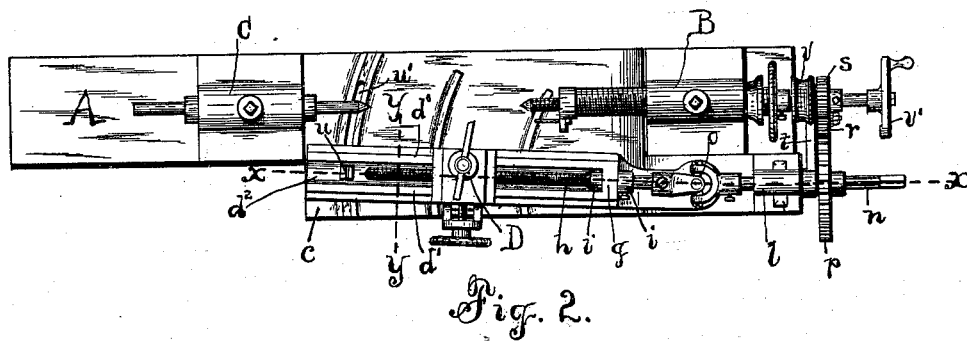
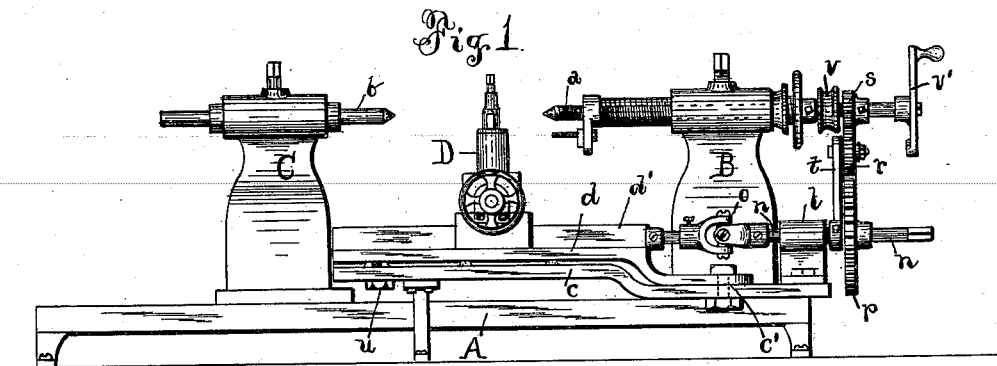
No. 650,213.

Patented May 22, 1900.

M. A. ACKLES.
LATHE.

(Application filed Aug. 5, 1899.)

(No Model.)



WITNESSES:

H. B. Smith

J. J. Lewis

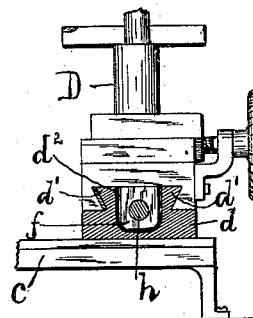


Fig. 4.

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SPECIFICATION forming part of Letters Patent No. 650,213, dated May 22, 1900.

Application filed August 5, 1899. Serial No. 726,229. (No model.)

To all whom it may concern:

Be it known that I, MORTIMER A. ACKLES, a citizen of the United States, and a resident of Skaneateles, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Lathes, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

10 This invention relates to attachments to lathes designed to turn conical valves and valve-seats and other tapering work.

The object of the invention is to provide simple, convenient, and efficient means for accurately guiding the tool-post longitudinally on the lathe and which guide shall be readily adjustable to carry the tool-post in lines at different angles in relation to the axis of the lathe-spindles, as may be required for turning different tapers on the work carried between said spindles; and the object, furthermore, is to provide proper means for moving the tool-post on the longitudinal guide disposed at various angles in relation to the axis of the lathe-spindles; and to that end the invention consists in the novel arrangement and construction of the component parts of the lathe attachment, as hereinafter fully described, and set forth in the claims.

30 In the accompanying drawings, Figure 1 is a side view of a lathe embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 is an enlarged vertical longitudinal section on line X X, and Fig. 4 is a vertical transverse section on line Y Y in Fig. 2.

35 Similar letters of reference indicate corresponding parts.

A represents the bed or supporting-frame of the lathe. B denotes the head-stock, which carries the live-spindle *a* in the usual manner. C denotes the tail-stock, to which the dead-spindle *b* is adjustably secured, and D represents the tool-post. All of said parts may be of any suitable and well-known construction.

45 My invention resides in the following attachments, to wit: To the bed A is firmly secured a supplemental bed *c*, which may also be fastened to either the head-stock B or the tail-stock C, or both. To the top of this supplemental bed *c*, adjacent to the head-stock B, as shown at *c'*, is pivoted a guide-arm *d*,

which is movable in a horizontal plane and can be turned on its pivot, so as to lie at different angles in relation to the axis of the live and dead spindles. By means of a clamp-screw *u*, connected to the arm *d* and passing through a segmental slot *u'* in the supplemental bed *c*, said arm is confined in its adjusted position. The top of said arm is provided with longitudinal guides *d'* *d'*, on which slides the correspondingly-shaped supporting-base *e* of the tool-post D. In a longitudinal groove *d''* between the guides *d'* *d'* is a nut *f*, which is rigidly attached to or formed integral with the base *e* and has its eye axially parallel with the arm *d*. In a hub *g*, formed on the arm *d* near the pivot *c'*, is journaled the feed-screw *h*, which works in the eye of the nut *f*. By means of collars *i* *i* on the screw at opposite sides of the hub *g* said screw is prevented from traveling longitudinally. In a bearing on a stationary post *l* is journaled a horizontal shaft *n*, which is coupled to the feed-screw *h* by a universal joint *o*, disposed with the axes of the joint in line with the pivot *c'*, so as to allow the arm *d* to be swung on its pivot into different positions in relation to the axis of the live and dead spindles without straining the connection of the screw with the shaft *n*. To this shaft is fastened a gear-wheel *p*, which by means of an intermediate pinion *r*, derives motion from a pinion or gear *s*, fastened to the live-spindle *a*. The feed-screw *h* is thus driven by the live-spindle, and the tool-post is shifted automatically and gradually lengthwise of the supporting-arm *d*. This arm having been adjusted to lie in a line parallel with the taper to be turned on the work held between the live and dead spindles causes the longitudinally-traveling tool-post, with the tool fastened thereto, to accurately cut the taper on the work.

In order to permit the tool-post to be rapidly and conveniently moved back to its starting-point, I mount the intermediate pinion *r* on an arm *t*, which is loosely mounted on the shaft *n*, so as to allow said arm to be swung outward and carry the pinion *r* out of engagement with the gears *p* and *s*.

The live-spindle *a* may be driven either by a belt-pulley *v* or by a hand-crank *v'*, and this crank may be shifted from said spindle

onto the outer end of the shaft *n* to turn the latter by hand in a direction which causes the tool-post to be moved back to its starting-point.

5 What I claim is—

1. The combination with the lathe-bed and the live and dead spindles, of a longitudinal guide-arm pivoted at one end to the bed at the side of the head-stock, means for confining said arm in its adjusted position, the tool-post sliding longitudinally on said guide-arm and provided with a nut disposed axially parallel with said arm, a feed-screw journaled on said arm and working in the aforesaid
15 nut, means sustaining said screw stationary endwise, a shaft coupled to said screw by a universal joint disposed directly over the pivot of the guide-arm, and mechanism transmitting motion from the live-spindle to the
20 aforesaid shaft as set forth.

2. The combination with the lathe-bed and the live and dead spindles, of a supplemental bed mounted stationary on the lathe-bed and provided with a transverse slot, a longitudinal guide-arm pivoted at one end to the supplemental bed at the side of the head-stock, a clamp-screw passing through the aforesaid slot and confining the guide-arm in its adjusted position, the tool-post sliding on said
25 guide-arm and provided with a nut disposed axially parallel with said arm, a feed-screw journaled on the guide-arm and working in the aforesaid nut, and provided with means to sustain the same stationary endwise, a
30 shaft coupled to said screw by a universal

joint disposed directly over the pivot of the guide-arm, gears secured respectively to said shaft and to the live-spindle, an intermediate pinion supported movable to and from engagement with the aforesaid gears, and means for turning the aforesaid shaft independent
40 of the gears as set forth.

3. The combination with the lathe-bed and the live and dead spindles, of a supplemental bed mounted stationary on the lathe-bed, and
45 provided with a segmental slot disposed transversely thereof, a longitudinal arm pivoted at one end to the supplemental bed at the side of the head-stock, and provided on its top with longitudinal guides and a longitudinal
50 groove between said guides, a hub formed on said arm near its pivot, a clamp-screw passing through said slot and confining said arm in its adjusted position, the tool-post sliding on the aforesaid guides and formed with a
55 nut disposed in said groove, a feed-screw journaled in the aforesaid hub and working in said nut, collars provided on said feed-screw at opposite sides of the hub to prevent the screw from traveling longitudinally, a shaft
60 coupled to said screw by a universal joint disposed directly over the pivot of the guide-arm, and mechanism transmitting motion from the live-spindle to said shaft as set forth.

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Witnesses:

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