

No. 666,040.

Patented Jan. 15, 1901.

A. TINDEL & O. ALBRECHT.

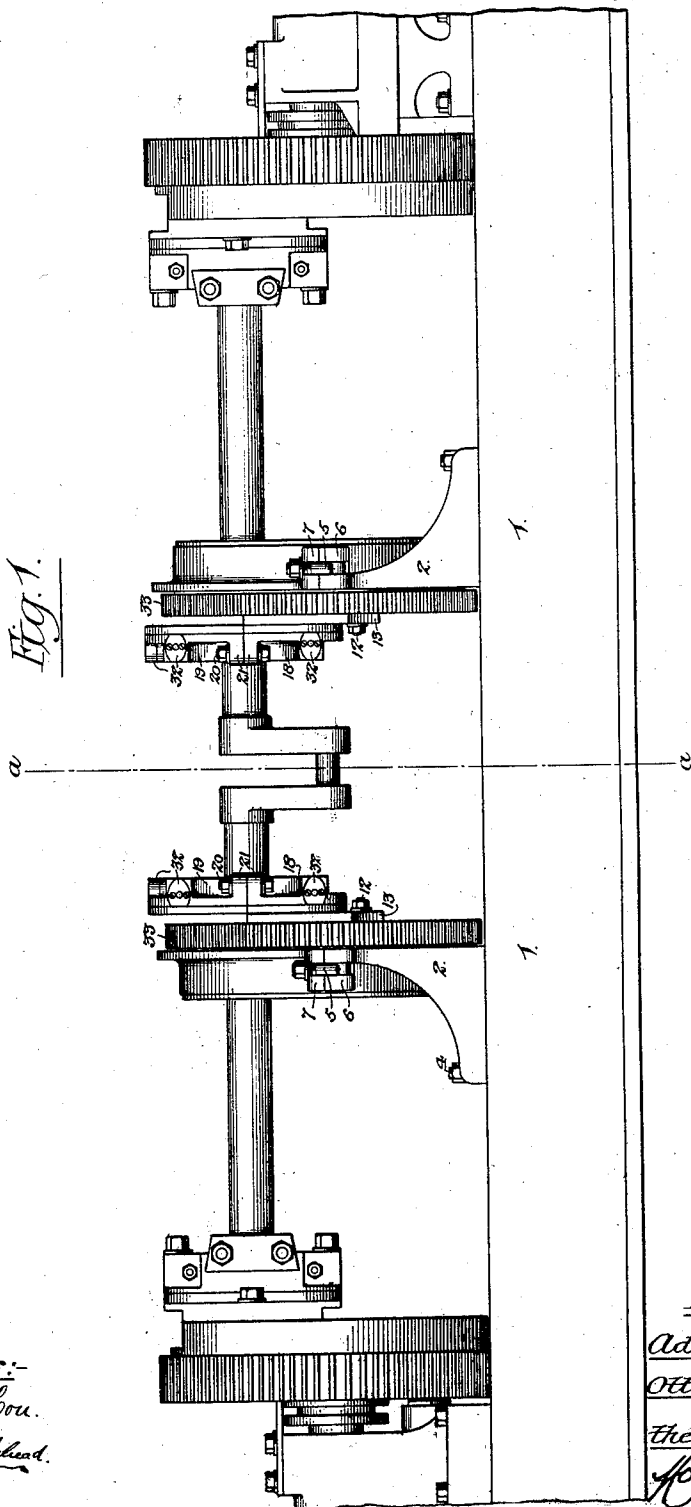
SHAFT SUPPORTING MECHANISM FOR CRANK PIN TURNING LATHES.

(Application filed Jan. 8, 1900.)

(No Model.)

4 Sheets—Sheet 1.

Fig. 1.



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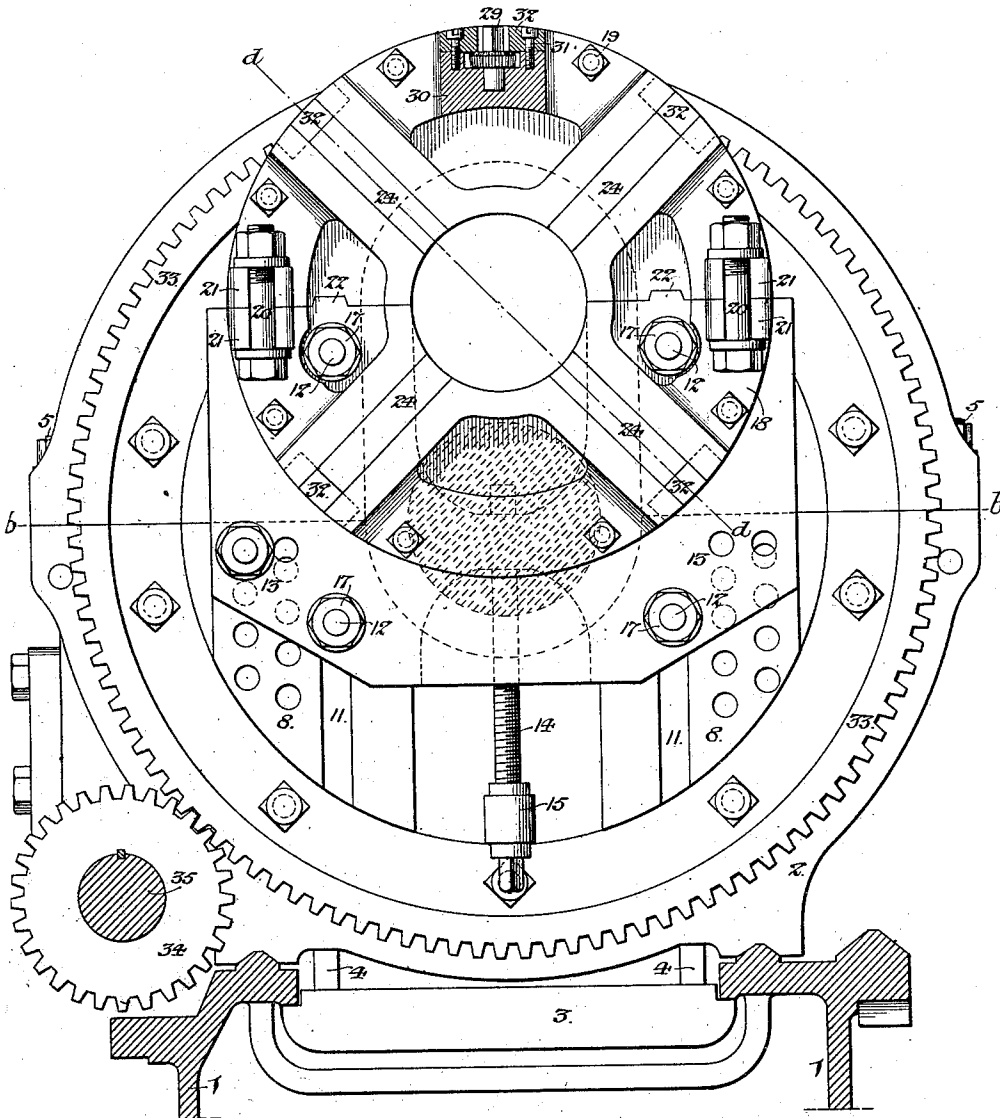
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Fig. 2.



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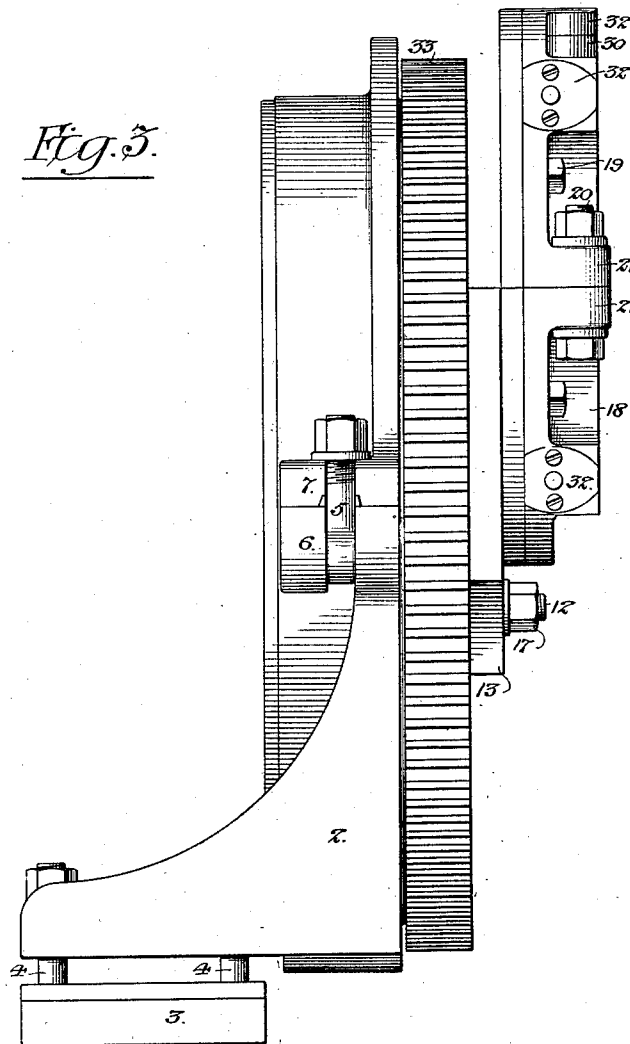
SHAFT SUPPORTING MECHANISM FOR CRANK PIN TURNING LATHES.

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Fig. 3.



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4 Sheets—Sheet 4.

Fig. 6.

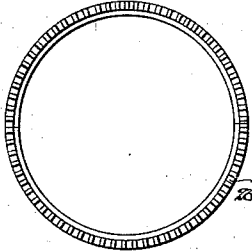


Fig. 4.

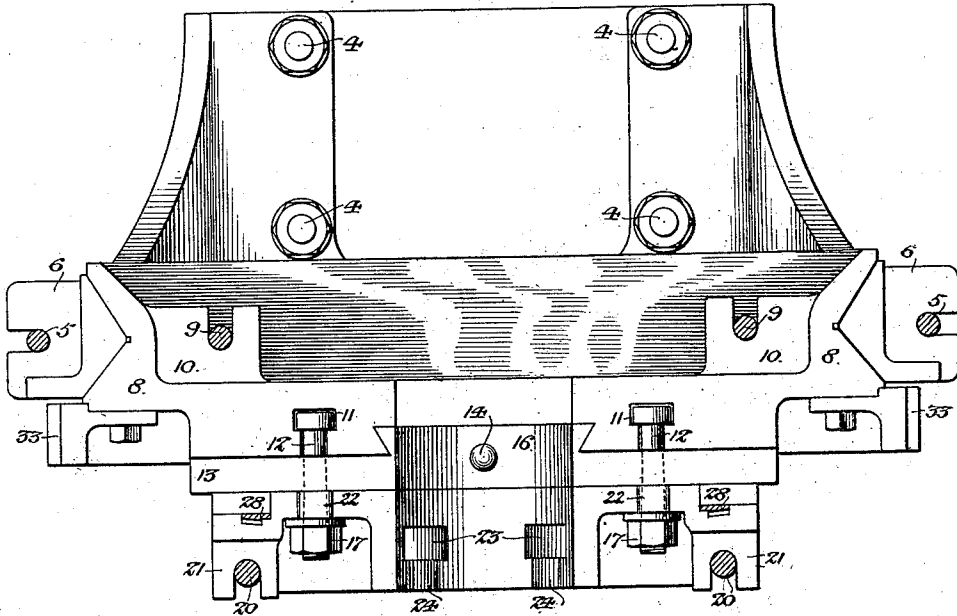
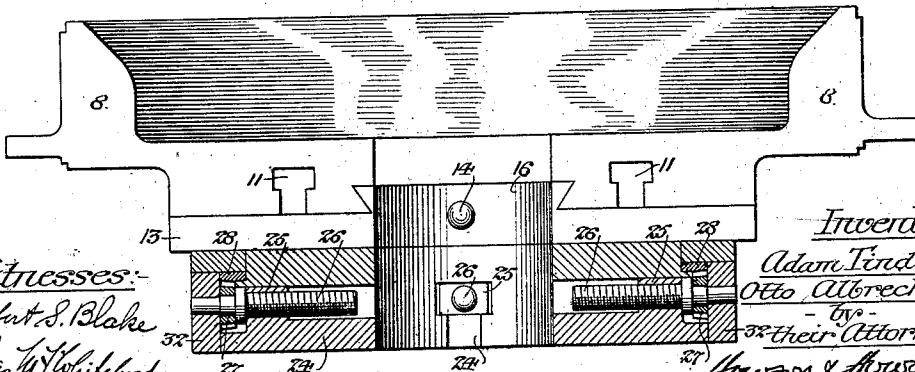


Fig. 2.



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UNITED STATES PATENT OFFICE.

ADAM TINDEL AND OTTO ALBRECHT, OF PHILADELPHIA, PENNSYLVANIA.

SHAFT-SUPPORTING MECHANISM FOR CRANK-PIN-TURNING LATHES.

SPECIFICATION forming part of Letters Patent No. 666,040, dated January 15, 1901.

Application filed January 8, 1900. Serial No. 740. (No model.)

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 Shaft-Supporting Mechanism for Crank-Pin-Turning Lathes, of which the following is a specification.

Our invention consists of certain devices to be employed in connection with a lathe for turning crank-pins, the object of our invention being to provide for the support of the crank-shaft at a point close to the pin which is being turned, so that inaccuracy due to the spring of the shaft under the pressure of the turning-tool or to the sagging of the shaft due to the length and weight of the same may be prevented.

Our invention consists of a chuck mounted so as to be rotatable around the same axis as the chuck which carries the ends of the crank-shaft, but applicable to the shaft at a point between its ends and as close as desirable to the crank; and it consists, further, in means for rotating said supplementary chuck, so that it constitutes an additional driving device for the crank-shaft, applying its power to the latter at a point close to the crank.

In the accompanying drawings, Figure 1 is a side view of sufficient of a crank-pin-turning lathe to illustrate our invention. Fig. 2 is a transverse section, on an enlarged scale, on the line *a a*, Fig. 1. Fig. 3 is a side view of the parts shown in Fig. 2. Fig. 4 is a section on the line *b b*, Fig. 2. Fig. 5 is a similar section, but with the chuck turned so as to show a section on the line *d d*, Fig. 2; and Fig. 6 is a face view, on a reduced scale, of one of the elements of said shank.

In Figs. 1 and 2 part of the bed of the lathe is represented at 1, this bed having guides for a slide 2, which can be adjusted longitudinally on the bed and secured in position after adjustment by means of a transverse clamp-bar 3 and bolts 4. The slide 2 is horizontally divided at the center, the two parts of the slide being confined together by means of clamp-bolts 5, which are hung to slotted lugs 6 on the lower half of the slide and engage with slotted lugs 7 on the upper half, as shown in Figs. 1 and 3.

The two-part slide constitutes a bearing for a ring 8, which is likewise centrally divided, the two parts of the ring being held together by clamp-bolts 9, engaging with slotted lugs 10 on the two parts of the ring, as shown in Fig. 4, and said ring has undercut transverse grooves 11 for the reception of bolts 12, carried by a chuck-slide 13, which can be adjusted to and fro across the ring 8 by means of a screw-stem 14, longitudinally confined to a stud 15 on said ring and engaging with a nut 16 on the slide, as shown in Fig. 4, said slide being firmly secured in position after adjustment by tightening-nuts 17 upon the bolts 12.

The chuck is formed in two parts, one part 18 being secured to or forming part of the chuck-slide 13 and the other part 19 being secured to the part 18 by means of clamp-bolts 20, engaging with slotted lugs 21 on the two parts of the chuck and provided with suitable nuts, as shown in Fig. 2, a rib 22 upon one part of the chuck engaging with a corresponding groove on the other part, so as to insure the proper centering of the two parts of the chuck in respect to each other and relieve the bolts 20 from lateral strain.

Each part of the chuck has radial grooves 23 for the reception of one of the sliding jaws 24 of the chuck, each jaw having a nut 25, engaging with a screw-stem 26, which is longitudinally confined to the chuck, and has a bevel-wheel 27, meshing with an annular rack 28, mounted on the chuck, as shown in Fig. 5, so that the turning of said rack will effect simultaneous movement of all of the screw-stems 26 and will thus cause simultaneous advancement or retraction of all of the radially-movable jaws of the chuck.

The annular rack 28 is made in two parts, as shown in Fig. 6.

Movement may be imparted to the rack 28 by turning any one of the screw-stems 26 or by means of a special stem 29, mounted in a bearing 30 on the chuck and having a bevel-wheel 31, as shown in Fig. 2, for meshing with said rack 28.

The screw-stem 26 and the stem 29 are held in place by caps 32, detachably secured to the chuck.

The ring 8 has secured to it a spur-wheel 33, made in two parts, as shown in Fig. 2, and meshing with a spur-pinion 34 upon a longi-

tudinal driving-shaft 35, adapted to suitable bearings at the front or back of the lathe, so that the ring 8 and the parts carried thereby can have imparted to them rotating movement independently of the movement of the face-plates of the lathe and can thus act as a means for driving the shaft at a point close to the crank, as well as a means of supporting the shaft at such point for the purpose of preventing deflection due to the length and weight of the shaft or the pressure of the turning-tool upon the crank-pin.

The formation of the parts of the supplementary shaft supporting and driving device in halves permits of their ready application to the shaft after the same has been mounted in the lathe, and such division of the parts will for this reason generally be resorted to, although it is not absolutely essential to the broader embodiment of our invention.

Having thus described our invention, we claim and desire to secure by Letters Patent—

1. The combination of the opposite, positively-driven main face-plates of a crank-pin turning lathe having chucks or carriers for receiving the end portions of the crank-shaft, with a supplementary shaft-support applied to the shaft at a point clear of the crank-arms between its ends and capable of rotating with the shaft, substantially as specified.

2. The combination of the opposite, positively-driven main face-plates of a crank-pin turning lathe having chucks or carriers for the reception of the end portions of the crank-shaft, a supplementary support applied to the shaft at a point clear of the crank-arms between its ends and capable of rotating with

the shaft, and provision for imparting rotating movement to said support whereby it serves as a supplementary driver for the crank-shaft, substantially as specified.

3. The combination in a crank-pin-turning lathe, of the opposite, positively-driven main face-plates having chucks or carriers for receiving the end portions of the crank-shaft, with a supplementary shaft-support applied to the same at a point clear of the crank-arms between its ends and comprising a slide mounted upon the framework of the lathe, a ring mounted so as to be capable of turning in bearings on said slide and a chuck carried by or rotating with said ring, substantially as specified.

4. The combination in a crank-pin-turning lathe, of the main face-plates having chucks or carriers for the reception of the end portions of the crank-shaft, with a supplementary shaft-support applied to the shaft at a point between its ends and comprising a slide mounted upon the bed of the lathe, a ring mounted so as to be free to rotate in a bearing on said slide, a slide adjustable on said ring toward and from the axis of the lathe, and a chuck carried by said slide, substantially as specified.

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

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Witnesses:

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