

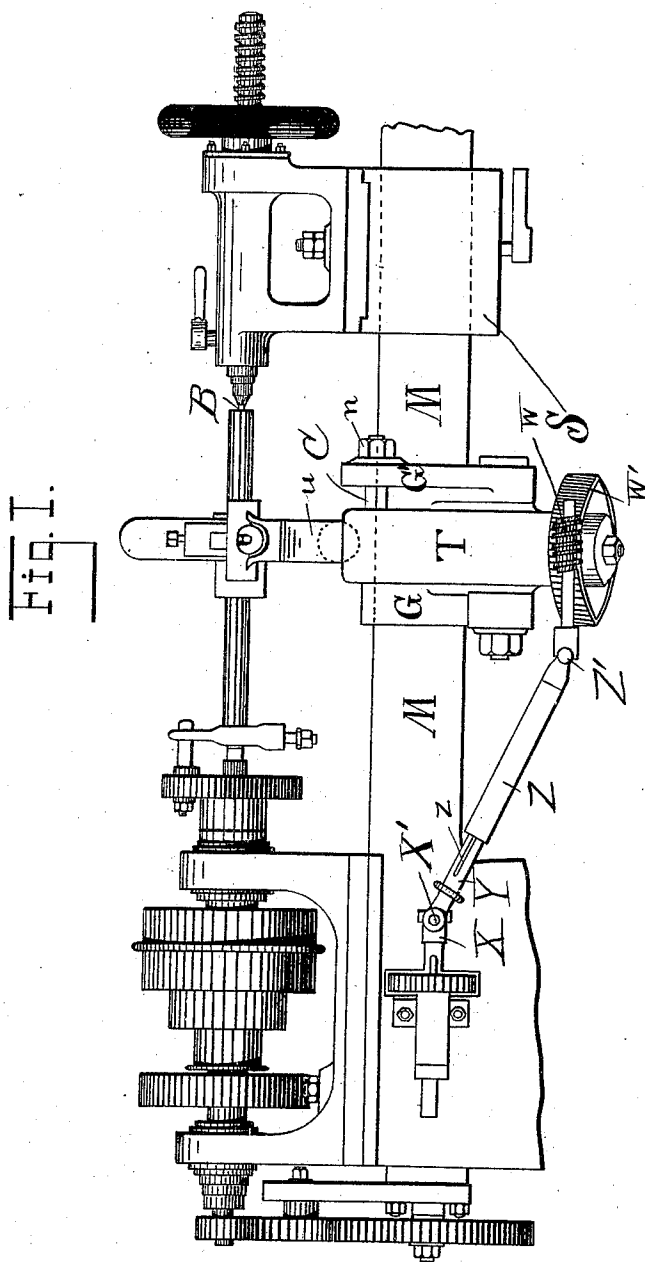
(No Model.)

C. A. WINDMÜLLER.
CONSTRUCTION OF LATHES.

3 Sheets—Sheet 1.

No. 513,356.

Patented Jan. 23, 1894.



Witnesses
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Fig. II.

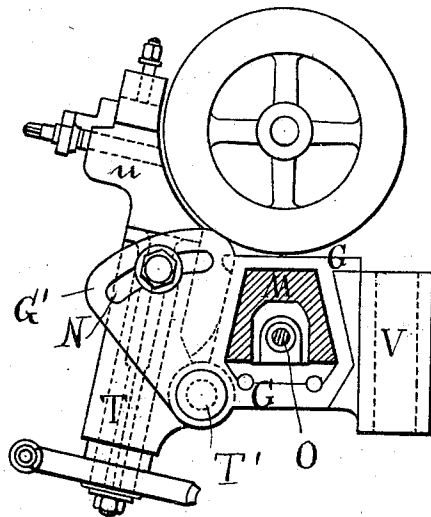
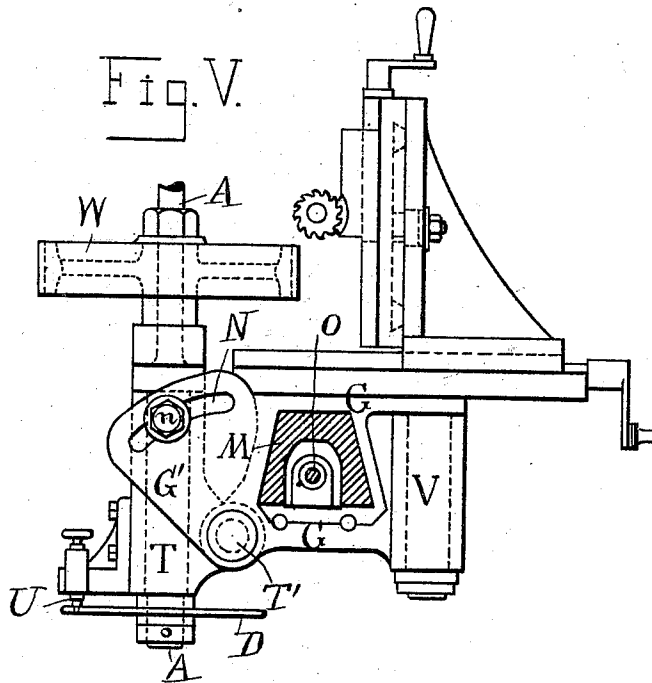


Fig. V.



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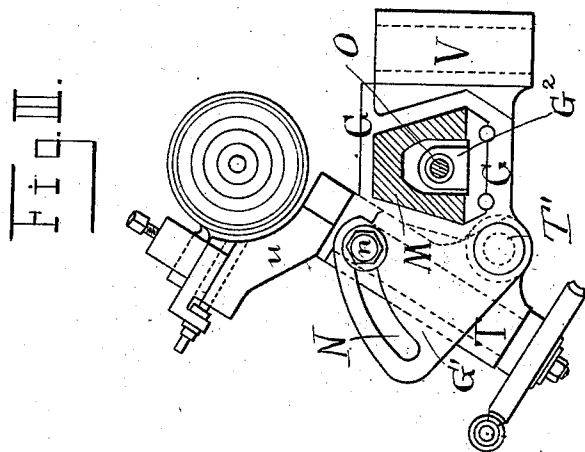
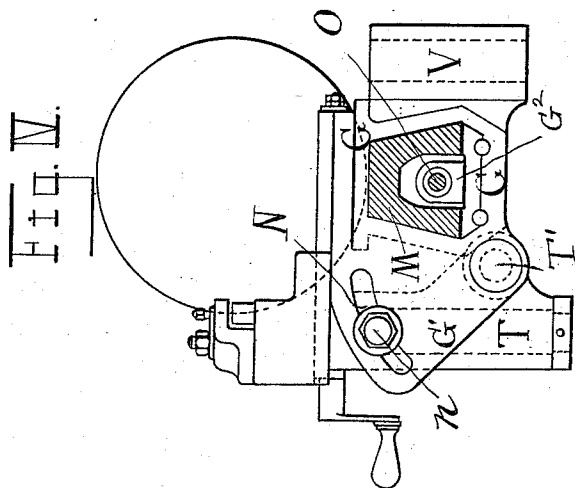
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UNITED STATES PATENT OFFICE.

CARL AUGUST WINDMÜLLER, OF CHEMNITZ, GERMANY.

CONSTRUCTION OF LATHES.

SPECIFICATION forming part of Letters Patent No. 513,356, dated January 23, 1894.

Application filed July 11, 1892. Serial No. 439,573. (No model.)

To all whom it may concern:

Be it known that I, CARL AUGUST WINDMÜLLER, manufacturer, of Chemnitz, in the Kingdom of Saxony and German Empire, have invented new and useful Improvements in the Construction of Lathes, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in or connected with machinery or tools, not only to be used for the turning of shafts, flanges, spheres, cones, wheels, hollow channels, screw-cutting, &c. but also for other purposes, as the cutting of tooth-wheels, planing, shaping, &c.

This invention will be readily understood by reference to the accompanying drawings.

Figure I shows in front elevation so much of a machine constructed according to this invention as will be necessary to explain the same. Fig. II is a transverse vertical section of same, and Figs. III, IV, and V are similar views showing different positions and fittings.

Similar letters of reference refer to like parts in all the figures.

The bed M is trapezoidal in cross section and is made with a recess open at the bottom and adapted to receive the usual screw spindle O, which serves to displace the tool longitudinally of the blank. S is the carrier in which the stationary spindle B is journaled, said carrier and spindle being adjustable in any well known or approved manner. G is the slide-rest adapted to carry the tool and engages with the screw spindle by means of a female-threaded extension G² projecting into the recess of the bed. This slide-rest is constructed to completely surround the bed M, and is provided on one side with a socket T, hinged at T'. The slide-rest G is also provided with another extension G', having a slot N, and a screw C is secured to the socket T, said screw being adapted to pass through the slot N, and the socket can be locked in relation to the slide-rest by means of a nut n. The socket T is adapted to receive a suitable carrier u constructed to hold a tool, and it will be understood that these carriers can be exchangeable, as illustrated by Figs. II, III and IV, where different carriers are shown. It is preferred to so construct the carriers u that

they will conform to the shape of the blank to be operated upon, as will be seen in Figs. II and III.

On the side of the slide-rest G opposite to that where the socket T is hinged, I provide another socket V, which is also constructed to carry a tool-holder. It will be understood that these tool-holders are likewise exchangeable. Fig. V shows a mechanism for cutting the teeth of toothed wheels in connection with the socket V, and it will be observed that in this case the wheel W will be temporarily secured to the socket T. Instead of the socket V, rigidly connected with the slide-rest G, I may employ a hinged socket similar to, or identical with, the socket T.

In consequence of the hinged connection between the slide-rest G and the socket T, I am enabled to adjust the tool very exactly in relation to the blank and also to remove the tool from the blank so as to lay the latter open for inspection. The slide-rest G is made to move transversely in front of the blank by any suitable mechanism. When the lathe is employed for cutting toothed wheels, the mechanism for operating the slide-rest G is thrown out of gear, so that the slide-rest remains stationary. A disk D (Fig. V) is secured at the lower end of the shaft or spindle A to the upper end of which the wheel W is fastened, so that the wheel W and disk D will rotate together. The disk D is provided with the same number of teeth which it is desired to cut on the wheel W. A pin U is secured to the lower end of the socket T, and is adapted to arrest the disk D when the same is advanced to cut another tooth on the wheel W, so that the wheel is adjusted to the exact position for cutting the next tooth.

In order to turn curved surfaces, I employ a mechanism by which the tool is turned upon its axis during its lateral progress. This mechanism, which is an important feature of my invention, is shown in Fig. I and consists of a rotatable shaft X having a universal joint X', a rod Y and a sleeve Z fitting around the rod, another universal joint Z', and a worm w, adapted to rotate the worm-wheel w' and the tool which is rigidly connected with the worm-wheel. The rod Y is provided with a longitudinal rib or feather z,

and the sleeve Z with a corresponding groove so that the rod and sleeve will be free to slide the one within the other, but compelled to rotate together.

5 What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. In a lathe, a slide-rest having guided movement on the bed of the lathe and provided with a slotted lateral extension, a socket 10 hinged to the said extension, a screw secured to the socket and adapted to pass through the slot in the extension of the slide-rest, and a nut for locking the socket in relation to the slide-rest, substantially as described.

2. In a lathe, a slide-rest having guided movement on the bed of the lathe, a socket hinged to one side of the slide-rest, means for locking the socket and the slide-rest in relation to each other, and another socket located 20 on the opposite side of the slide-rest and connected therewith, substantially as described.

3. In a lathe, a slide-rest having guided movement on the bed of the lathe, a socket 25 hinged to one side of the slide-rest, a tool held in the said socket, means for locking the socket and the slide-rest in relation to each other, means for moving the tool transversely, and means for rotating the tool while it is 30 passed in front of the blank, substantially as described.

4. In a lathe, a slide-rest having guided movement on the bed of the lathe, a socket

hinged to one side of the slide-rest, a tool held in the said socket, means for locking the 35 socket and the slide-rest in relation to each other, another socket located on the opposite side of the slide-rest and connected therewith, means for moving the tool transversely, and means for rotating the tool while it is 40 passed in front of the blank, substantially as described.

5. In a lathe, a slide-rest having guided movement on the bed of the lathe, a socket hinged to one side of the slide-rest, a tool held 45 in the said socket, means for locking the socket and slide-rest in relation to each other, means for moving the tool transversely in front of the blank, a worm-wheel rigidly connected with the shank of the tool, a worm engaging 50 with the worm-wheel, a sleeve constructed to rotate together with the worm, a rod located within the sleeve and capable of sliding therein, means for causing the rod and the sleeve to rotate together, suitable joints for 55 permitting the rod and sleeve to alter their positions in relation to the axis of the worm, and means for rotating the rod, substantially as described.

In witness whereof I hereunto set my hand 60 in presence of two witnesses.

CARL AUGUST WINDMÜLLER.

Witnesses:

EUG. A. FRAISSINET,
A. B. BEYREUTHER.