No. 685,264. Patented Oct. 29, 1901.

J. DENGLER.

SCREW CUTTING TOOL.

(Application filed Oct. 22, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

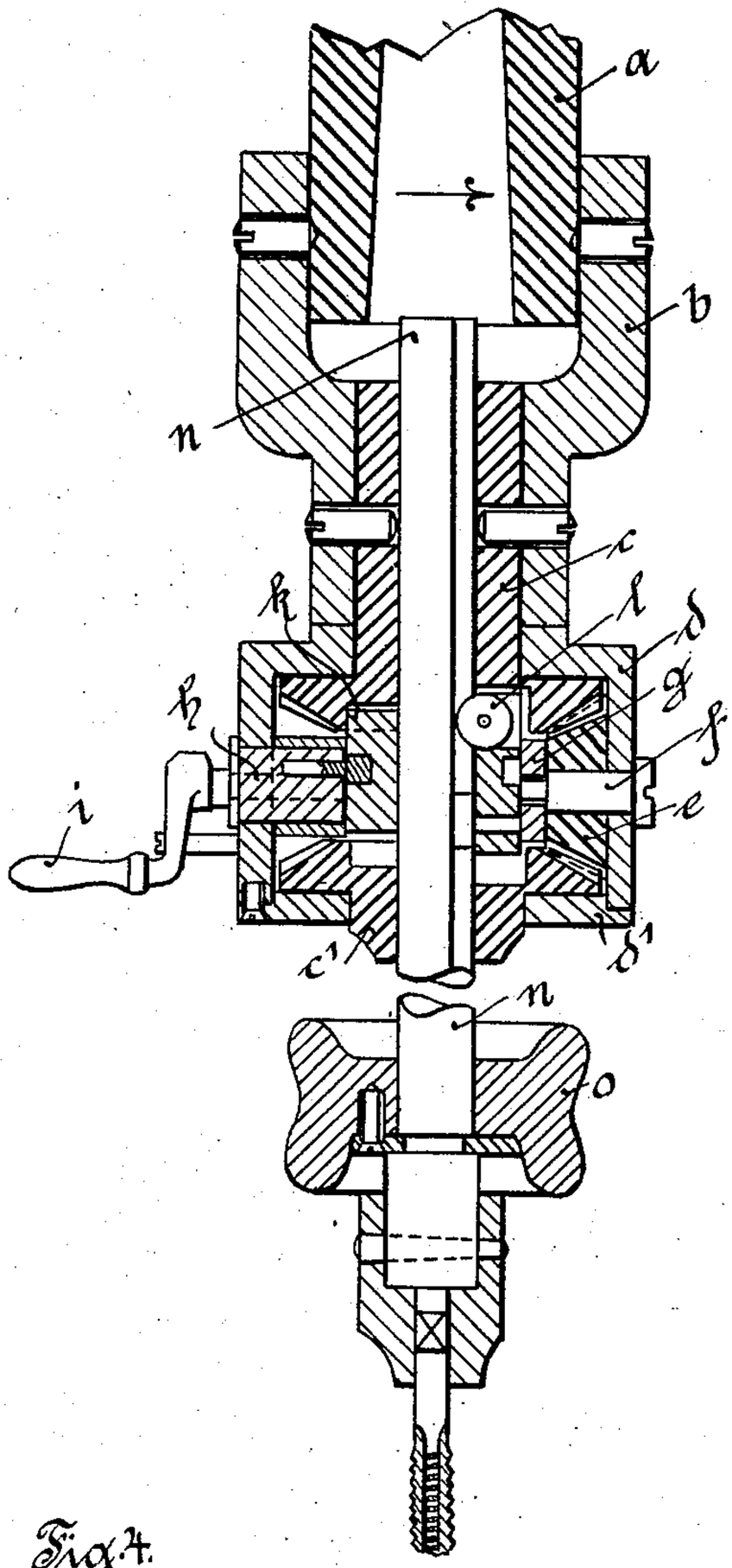


Fig. 4.

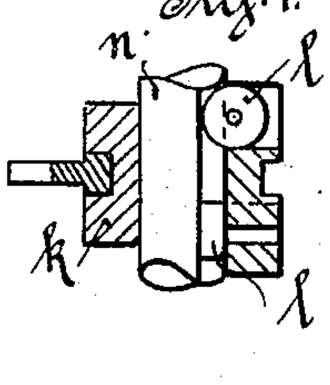
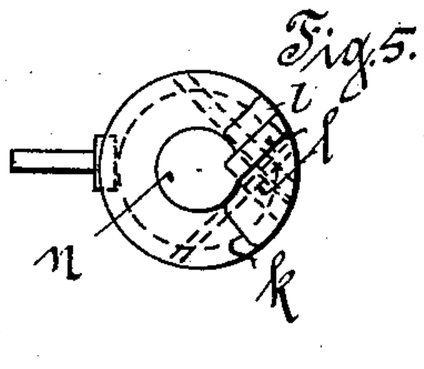


Fig. 5.



Witnesses:
William Schulz
John Huckman.

Inventor:
Johannes Dengler
by his attorneys
Roeder & Briesen

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Fig. 2.

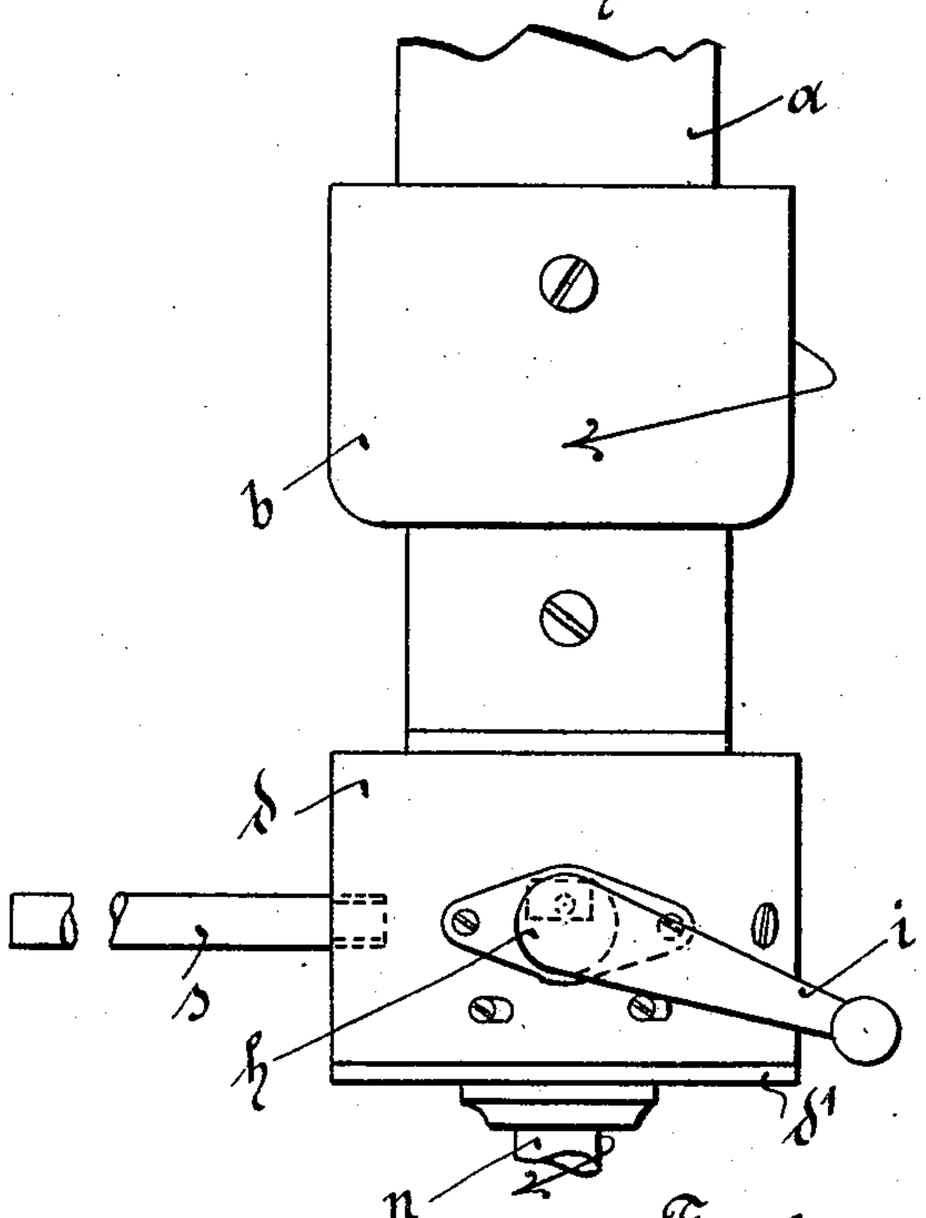
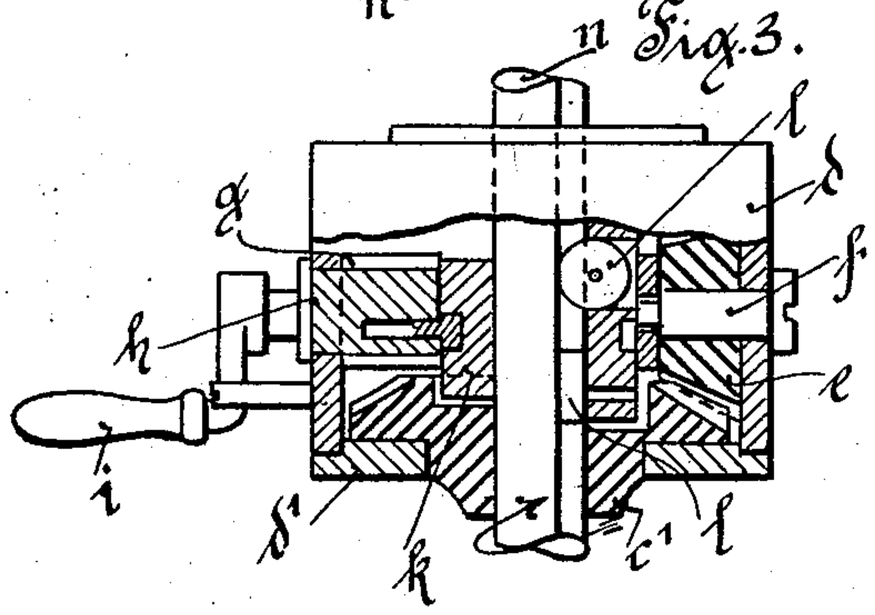


Fig. 3.



Witnesses:
William Schulz.
John Heckman

Inventor:
Johannes Dengler
by his attorneys
Roester & Brenner

UNITED STATES PATENT OFFICE.

JOHANNES DENGLER, OF CANNSTADT, GERMANY.

SCREW-CUTTING TOOL.

SPECIFICATION forming part of Letters Patent No. 685,264, dated October 29, 1901.

Application filed October 22, 1900. Serial No. 33,804. (No model.)

To all whom it may concern:

Be it known that I, JOHANNES DENGLER, a citizen of Germany, residing at Cannstadt, Würtemberg, Germany, have invented certain new and useful Improvements in Screw-Cutting Tools; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a screw-cutting tool in which the tap is secured to a longitudinally-movable spindle provided with a coupling by means of which it may be set to rotate in opposite directions.

In the accompanying drawings, Figure 1 is a longitudinal section of the tool, showing the spindle coupled to rotate toward the right. Fig. 2 is a side elevation of the same; Fig. 3, a section of part of the tool, showing the spindle coupled to rotate toward the left; Fig. 4, a detail longitudinal section through the coupling; Fig. 5, a plan thereof.

The letter *a* represents the rotatable spindle of the screw-cutting machine, to which is attached a socket *b*. To this socket is secured a bevel-wheel *c*, which may, however, also be attached to spindle *a*. Below the socket *b* is arranged a sleeve *d*, which is provided with a handle *s*, so that it may be prevented from partaking in the rotation of the spindle *a*. Within the sleeve *d* is contained a bevel-wheel *e*, mounted upon a bolt *f* and meshing into the wheel *c* and also into a bevel-wheel *c'*, which thus rotate in opposite directions. The bolt *f* is fitted into a collar *g*, which constitutes the bearing for the coupling-shaft *h* and also serves to space the wheels *c* and *c'*. A cover *d'* closes the lower side of the sleeve *d*.

k is the coupling, which by turning a handle *i* may be brought into engagement either with the wheel *c* or the wheel *c'*. The coupling *k* is longitudinally movable on tool-spindle *n* and rotates the same by rollers *l*, Fig. 4. A spring (not shown) prevents the spindle *n* from dropping down.

The spindle *n* is raised and rotated and the work-piece is placed upon a work-table below the tap. The spindle is then drawn down by means of a hand-wheel *o* and the tap is entered into the hole of the work-piece. As shown in Fig. 2, the lever *i* must be swung toward the right, so that the coupling will engage the upper wheel *c* for a rotation toward the right. The tap will be automatically drawn into the hole, and the spindle *n* will be drawn downward by the thread cut until the lever *i* is swung around, so that the coupling *k* is brought into engagement with the lower wheel *c'*, Fig. 3. The spindle *n* will now rotate toward the left, so that the tap will be withdrawn. The rollers *l* of the coupling engage the two sides of an angular groove cut into the spindle *n*. If desired, more than two rollers may be used, or they may be placed opposite to each other, and by their use friction is avoided.

The tool may also be used for cutting left-hand threads or male threads and may be applied to lathes and other machines.

What I claim is—

A screw-cutting tool composed of a longitudinally-movable rotatable tool-shaft, a pair of gear-wheels, rotatable in opposite directions, a sleeve, an inclosed bevel-wheel engaging said gear-wheels, a longitudinally-movable coupling adapted to be connected to either of the gear-wheels, and rollers on the coupling that engage a groove of the tool-shaft, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

JOHANNES DENGLER.

Witnesses:

WILHELM BECK,

WM. HAHN.