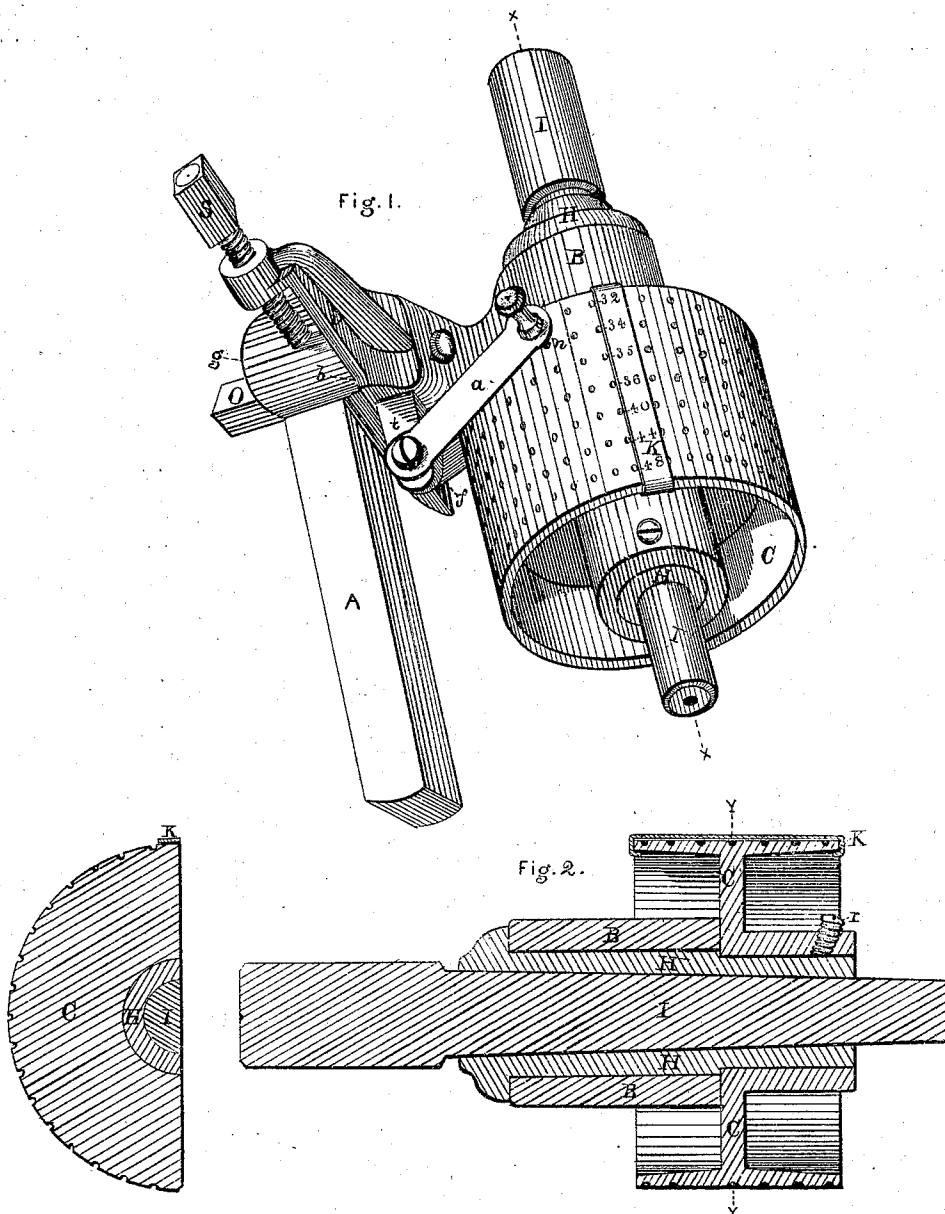


W. P. HOPKINS.

Gear-Cutting Attachments to Lathes.

No. 143,242.

Patented September 30, 1873.



WITNESSES.

Baldwin Coolidge  
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# UNITED STATES PATENT OFFICE.

WILLIAM P. HOPKINS, OF LAWRENCE, MASSACHUSETTS.

## IMPROVEMENT IN GEAR-CUTTING ATTACHMENTS TO LATHES.

Specification forming part of Letters Patent No. 143,242, dated September 30, 1873; application filed April 24, 1873.

*To all whom it may concern:*

Be it known that I, WILLIAM P. HOPKINS, of Lawrence, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Gear-Cutting Attachment for Lathes; and I do hereby declare the following to be a full, clear, and exact description of my invention, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

The object of this invention is to provide an improved and cheap gear-cutting attachment to be used in a lathe. It is attached to the lathe-carriage tool-post, as ordinary cutting-tools usually are, and is moved backward and forward by the same screw which feeds the cutting-tool, and the work is operated upon by a cutter turning upon the centers of the lathe.

Figure 1 is a perspective view of my invention. Fig. 2 is a longitudinal section of the arbor-box, arbor-spindle, arbor, and index-pulley taken on the line *xx* of Fig. 1; also, a transverse vertical section of one-half on the lines *yy*.

Similar letters of reference mark corresponding parts. All are made of metal.

A marks the bar of my device; B, the arbor-box; C, the index-pulley; H, the arbor-spindle; I, the arbor; K, the slide-clasp; O, the screw-bolt. The bar A, at the rear end, is secured in the tool-post; the other end is provided with a groove, *f*, in which slides the tongue *b* of the arbor-box B. This groove *f* and the tongue *b* are in a vertical position when the device is arranged for use. The screw-bolt O passes loosely through the slot *g* in the end of the bar A, and screws into the arbor-box B, holding these parts together, and permitting a variable adjustment of these parts together. The arbor-box B is provided with the arm *i*, which extends upward near the tongue *b* and over the end of the bar A, and receives the screw *s*, which regulates the adjustment of the arbor-box B upon the end of the bar A.

The work to be operated upon is fixed on

the large end of the tapering arbor I, which fits in the hollow spindle H, which turns free in the box B, and passes through it at the rear end, and has secured to it the index-pulley C, fastened by the set-screw *r*, so that both must turn together, as shown in Fig. 2. When the work on the arbor I needs to be rotated to cut the next groove or space, the index-point *n*, attached to the spring *a*, which is pivoted to the projecting arm *t* of the arbor-box B, is raised out of the hole in the index-pulley C, which can then be turned as desired, carrying with it the arbor-spindle and its attachments. When turned as desired, the spring *a* pushes the point *n* into the hole in the index-pulley C.

A number of rows of different numbers of holes around the pulley C provides various graduations, and pivoting the index-point spring *a* to the arm *t* allows the point *n* to swing across the circumference of the index-pulley C to either row of holes. The number of holes in each row is marked upon the face of the slide-clasp K directly over the row of holes the number represents. This slide-clasp K slides entirely around the circumference of the index-pulley C, and can be used to mark the number of holes passed under the index-point *n*, serving the purpose of the spacing-fork on common gear-cutting machines.

Having described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the arbor-box B, the arbor-spindle H, the index-pulley C, and the screw-bolt O, constructed substantially as shown and described, when used in combination with a slotted and grooved bar A and a lathe-carriage tool-post or lathe-carriage.

2. The slide-clasp K, when used with the index-pulley C, and the number of holes in each row in the pulley C is indicated on the face of the clasp K opposite the row of the holes the number represents, substantially as set forth.

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Witnesses:

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