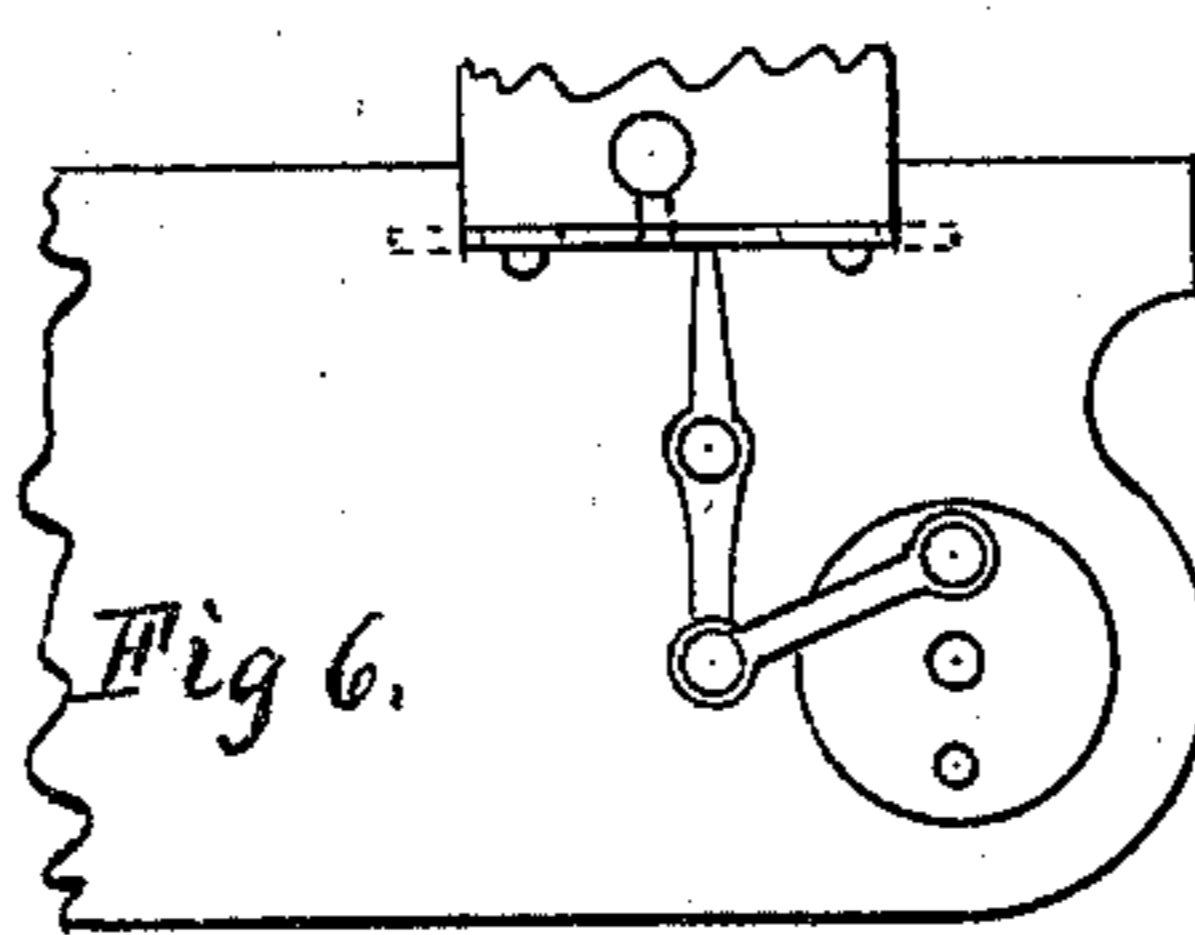
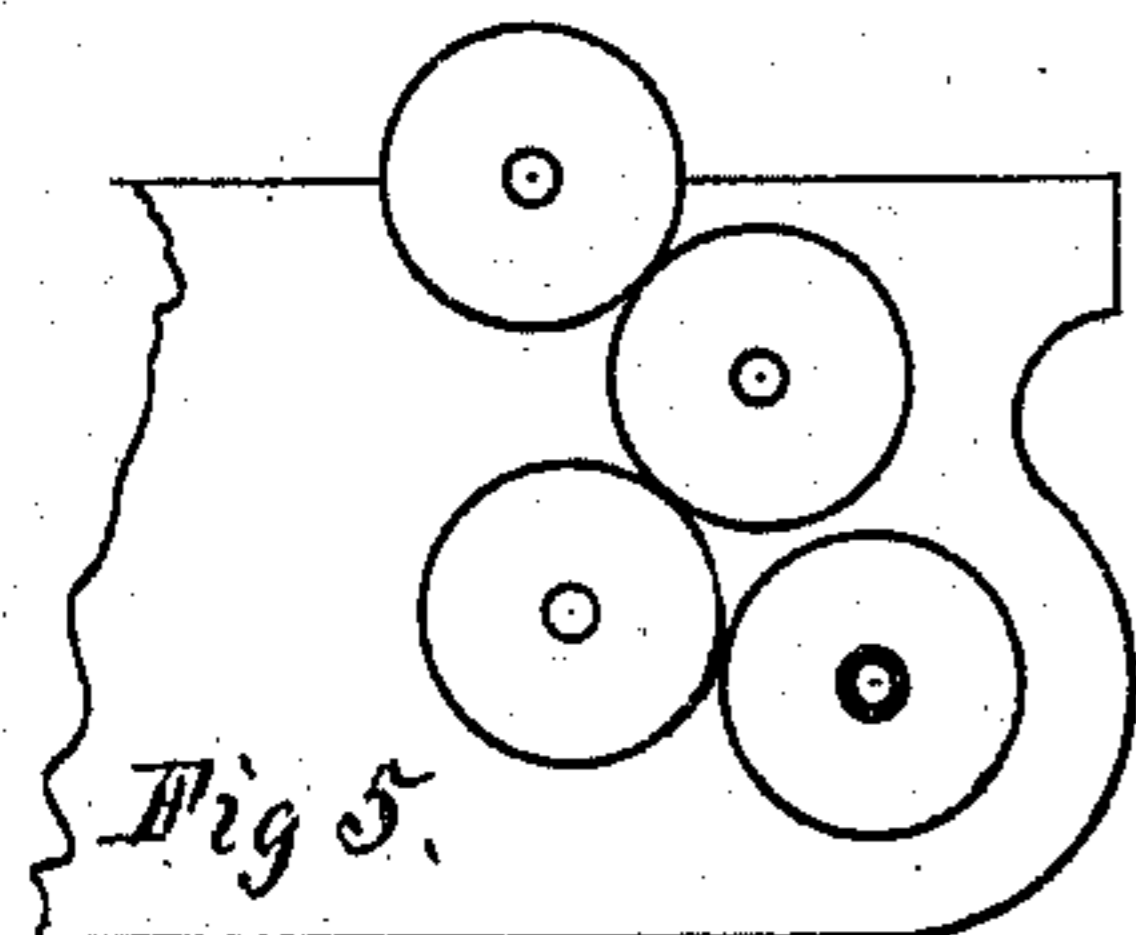
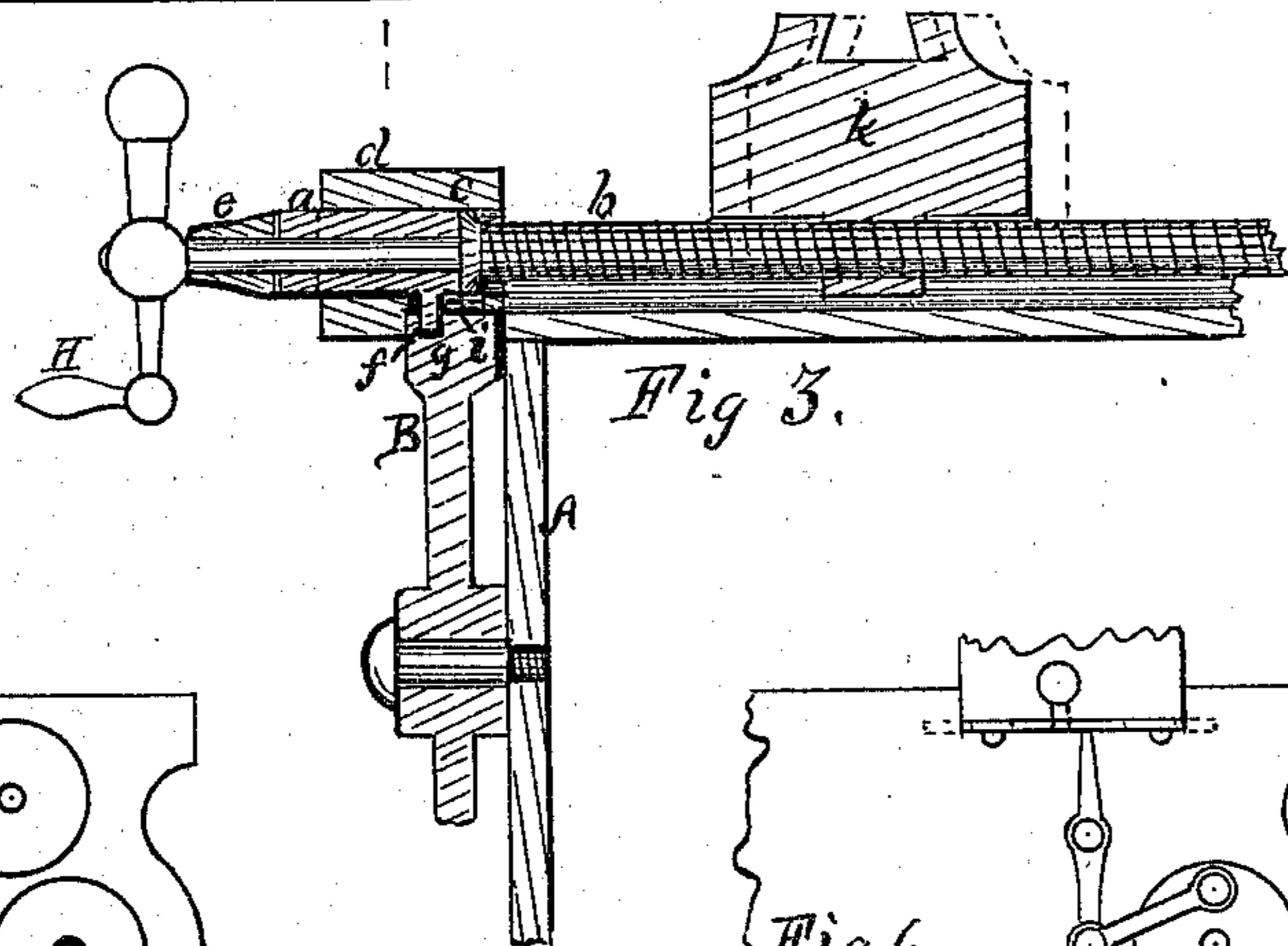
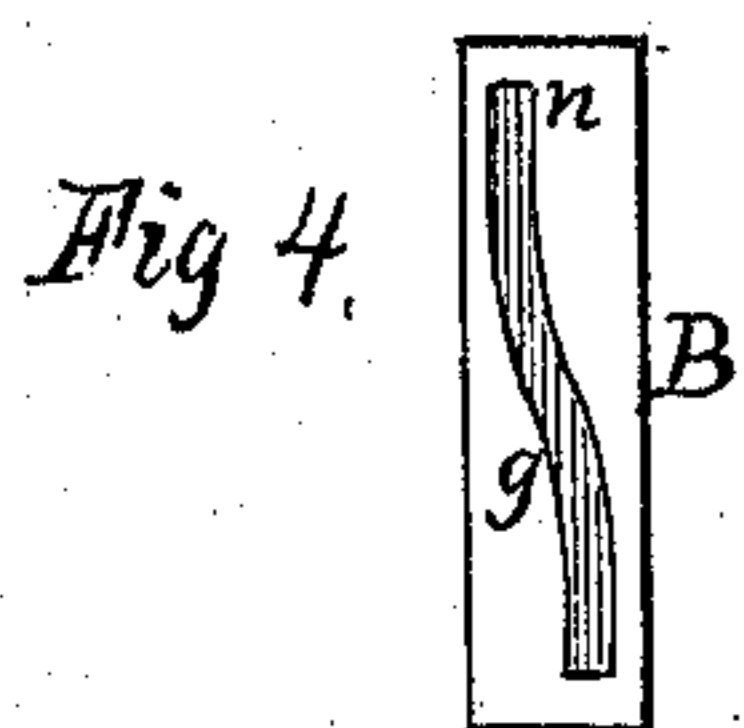
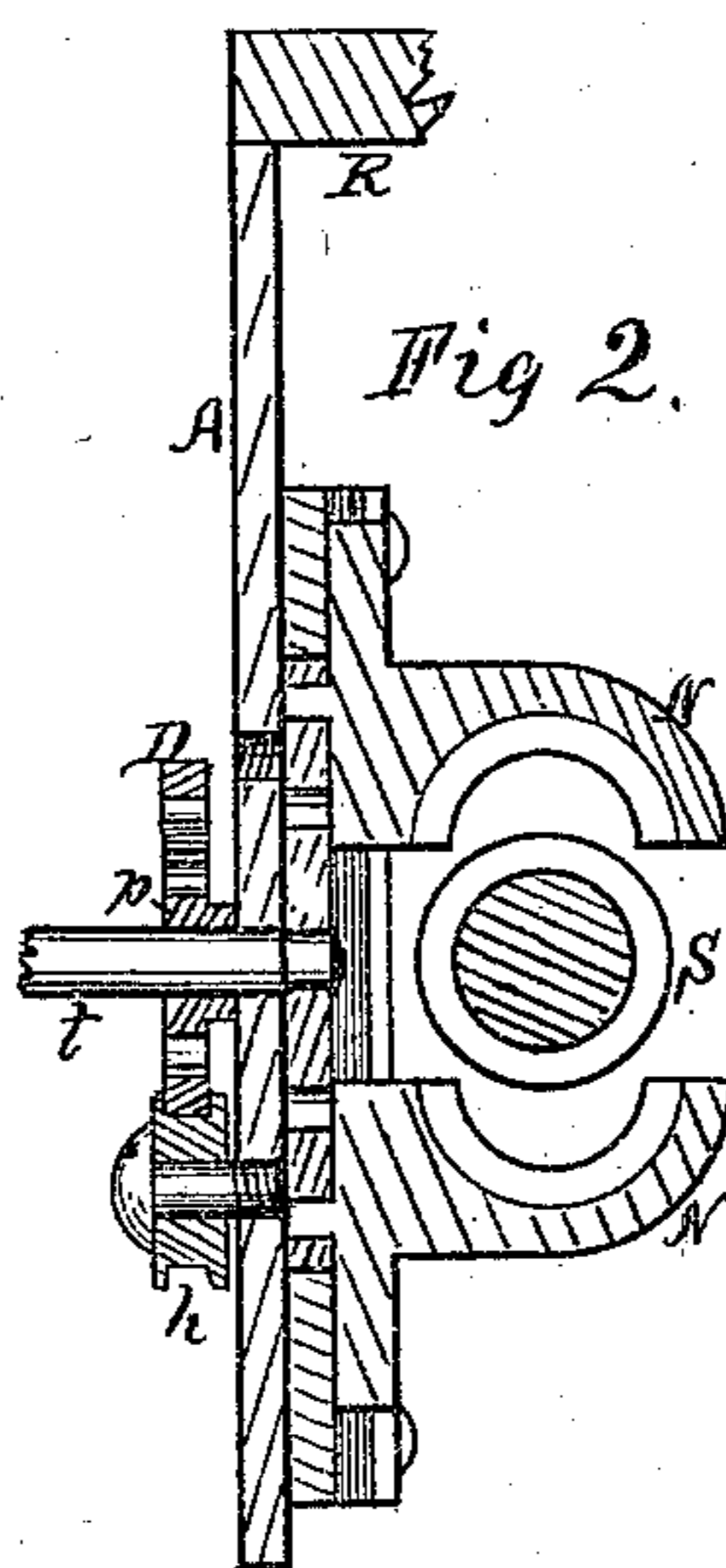
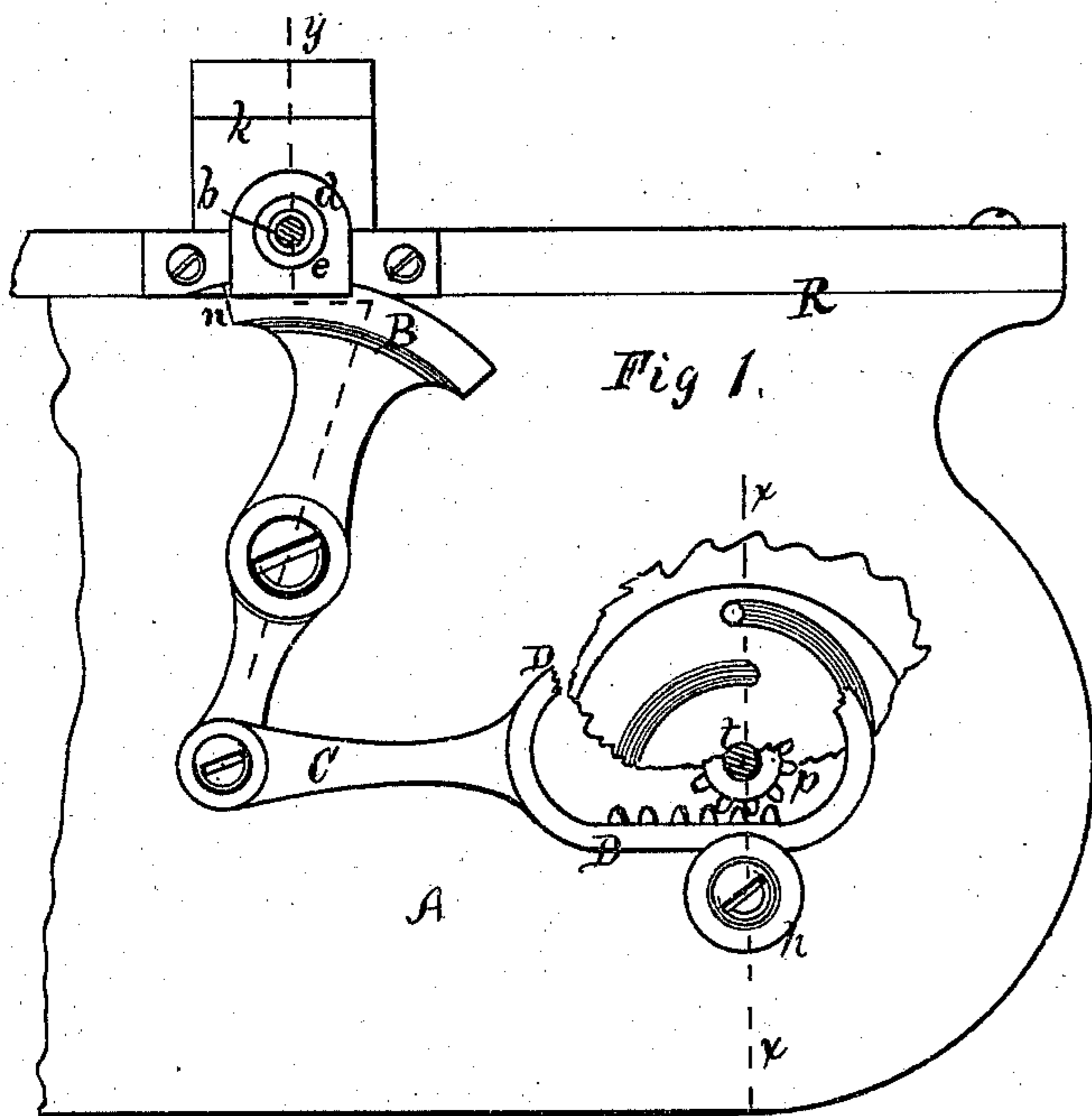


W. GLEASON.

Screw-Cutting Attachments for Lathes.

No. 143,898.

Patented Oct. 21, 1873.



Witnesses.  
George B. Felden.  
William Kidd 2<sup>d</sup>

Inventor.  
William Gleason  
By Wm. Goughborough  
Att'y

# UNITED STATES PATENT OFFICE.

WILLIAM GLEASON, OF ROCHESTER, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO KIDD IRON WORKS COMPANY, OF SAME PLACE.

## IMPROVEMENT IN SCREW-CUTTING ATTACHMENTS FOR LATHES.

Specification forming part of Letters Patent No. **143,898**, dated October 21, 1873; application filed September 22, 1873.

*To all whom it may concern:*

Be it known that I, WILLIAM GLEASON, of Rochester, in the county of Monroe and State of New York, have invented certain Improvements in Screw-Cutting Attachment for Lathes, of which the following is a specification:

This invention relates to lathes which may be used for cutting screw-threads; and it consists, essentially, in connecting, by suitable mechanical means, the tool-stock of such lathes with the shear-nut, whereby, when the nut is opened by the operator, the "tool" or cutter shall be withdrawn from its work by the same movement and at the same instant.

Figure 1 is a front elevation of a portion of the sliding tool-rest of an ordinary engine-lathe having my invention attached. Fig. 2 is a transverse vertical section of the same on line *x*. Fig. 3 is a similar view on line *y*. Fig. 4 is a top view of the adjusting-segment B. Figs. 5 and 6 are modifications of my invention.

When cutting screw-threads in the ordinary engine-lathes, as heretofore constructed, the greatest care and attention are required on the part of the operator in returning the tool to its place after a cut has been made, which should be done at the same time that the shear-nut is closed upon the feed-screw, the one operation being performed with one hand and the other with the other. The object of this invention is to enable him, with one hand, to withdraw the cutting-tool and open the nut at the same instant, and vice versa.

In applying my invention, I provide the feed-screw *b* of the tool-stock with a loose sleeve, *a*, fitted between the fixed and loose collars *c* and *e*, or both collars may be fixed, if desired. The sleeve is allowed to slide within the arch *d*, carrying the screw with it, but is prevented from turning with the screw by the stud *f*, which moves in a mortise, at *i*, running parallel with the screw. This stud *f* reaches into the sinuous groove *g*, Figs. 3 and 4, in the circumferential face of the segment B, which groove and stud govern the longitudinal movements and position of the screw. The segment B is pivoted centrally to the apron A of the sliding rest R, and the lower end is

hinged to the arm C of the double rack D, which latter is carried by the double-flanged pulley *h*. The rack gears into a pinion, *p*, which is fixed upon the shaft *t*, by which the ordinary shear-nut N of engine-lathes is opened and closed. When the segment B is in the position shown in Fig. 1, the feed-screw *b* and tool-stock *k* will occupy the position shown in full lines in Fig. 3, the stud *f* resting in that end of the sinuous groove shown at *n*, Fig. 4.

The tool is withdrawn from its working position, and the shear-nut N is opened from the feed-screw S of the lathe by a partial forward turn of shaft *t*. It will be seen that this permits the tool-stock *k* to be returned toward the head of the lathe, when the desired set of the cutting-tool may be regulated, for the next cut, by a partial turn of the screw *b* by the handle H. The parts are then thrown into their working position by a partial backward turn of the crank-handle on the shaft *t*.

It will be seen that, with this attachment, the operator can set the tool in, or withdraw it from, its work at any desired point along the screw.

When inside threads are to be cut the pulley *h* is removed and placed above the pinion, causing the upper half of the rack D to be thrown into gear with the pinion, which of course would reverse the order of the movement of the cutting-tool in relation to those of the shear-nut.

Various other mechanical means might be employed for connecting the nut N and tool-stock *k*, so as to impart to them a simultaneous movement, when changes are made, without an essential departure from the character of my invention. One is shown in Fig. 5, in which a spur-wheel is applied in place of the pinion *p*, and one hung upon the feed-screw *b*, with a sort of cam projection upon each side, to work against similar cams on the collar *a*, and one or more intermediate gear-wheels.

Another modification, and which would probably be preferable, is shown in Fig. 6, and consists in the employment of a wrist-pin and connecting-link instead of rack and pinion. In this construction the upper end of the pivoted lever connects with a sliding plate, in

which is formed the diagonal groove for the stud of the sleeve to work in.

What I claim as my invention is—

1. As an improvement in screw-cutting attachments to lathes, the cam-lever B, in combination with the sliding sleeve *a*, feed-screw *b*, and tool-stock *k*, all acting conjointly, substantially as and for the purposes set forth.
2. The longitudinally-adjustable tool-stock

feed-screw *b* and adjusting cam B, or its equivalent, in combination with the shear-nut N and intermediate mechanism, operating conjointly, substantially in the manner and for the purposes set forth.

WILLIAM GLEASON.

Witnesses:

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