

JOHN FENSON.

Improvement in Machines for Turning Shafting.

No. 126,538.

Patented May 7, 1872.

Fig. 1.

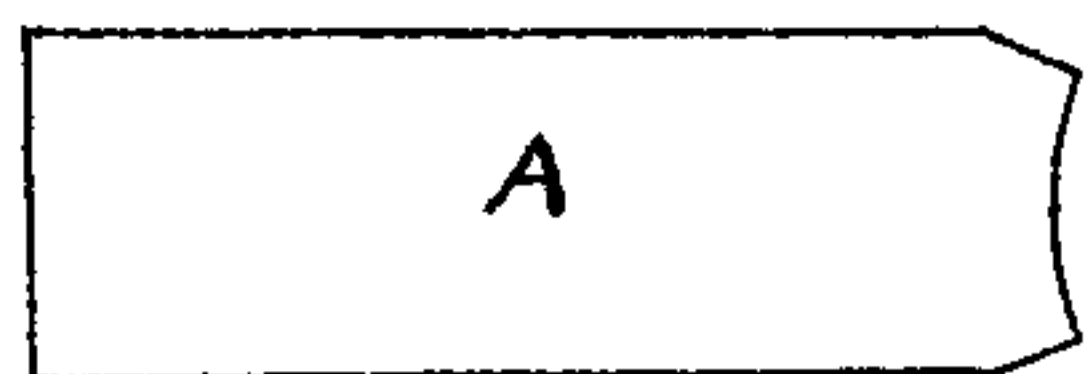
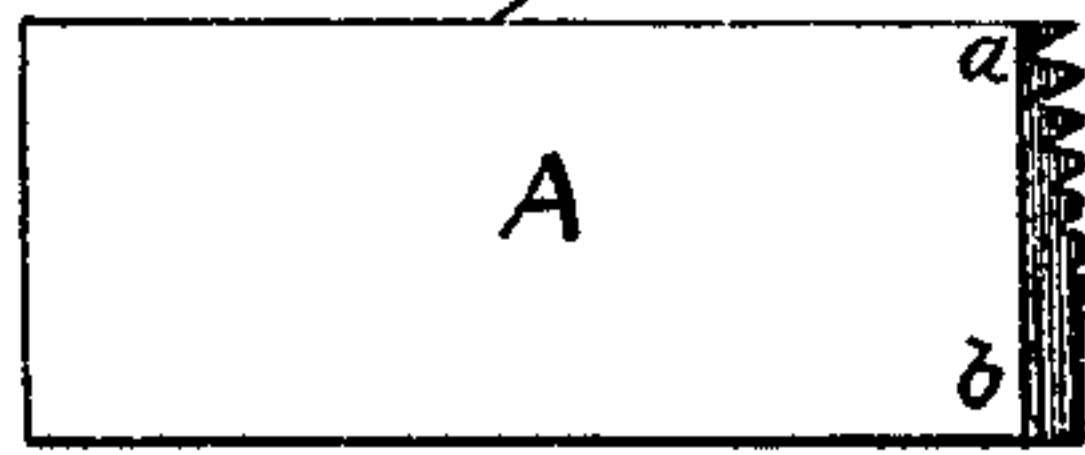


Fig. 2.

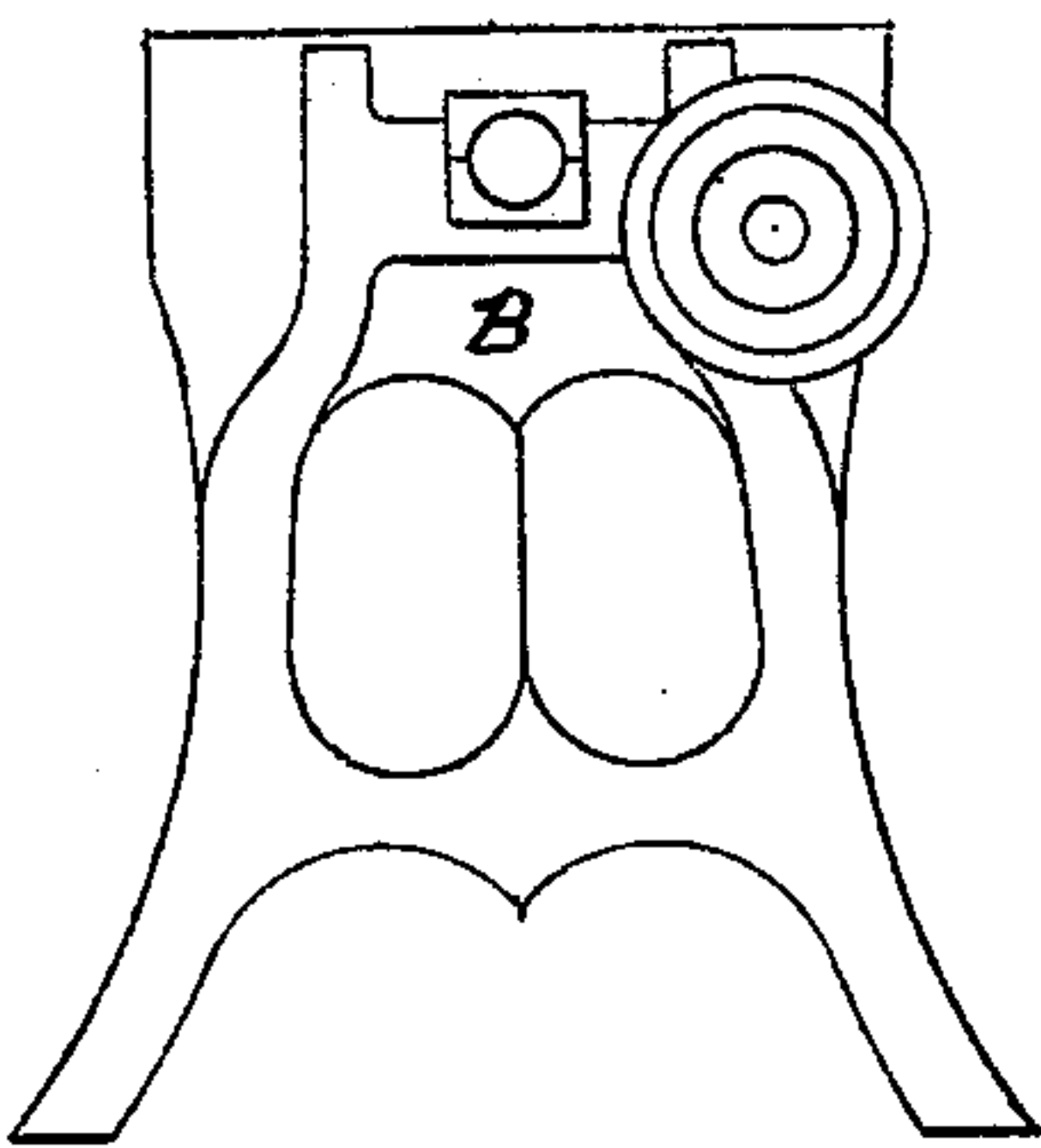


Fig. 3.

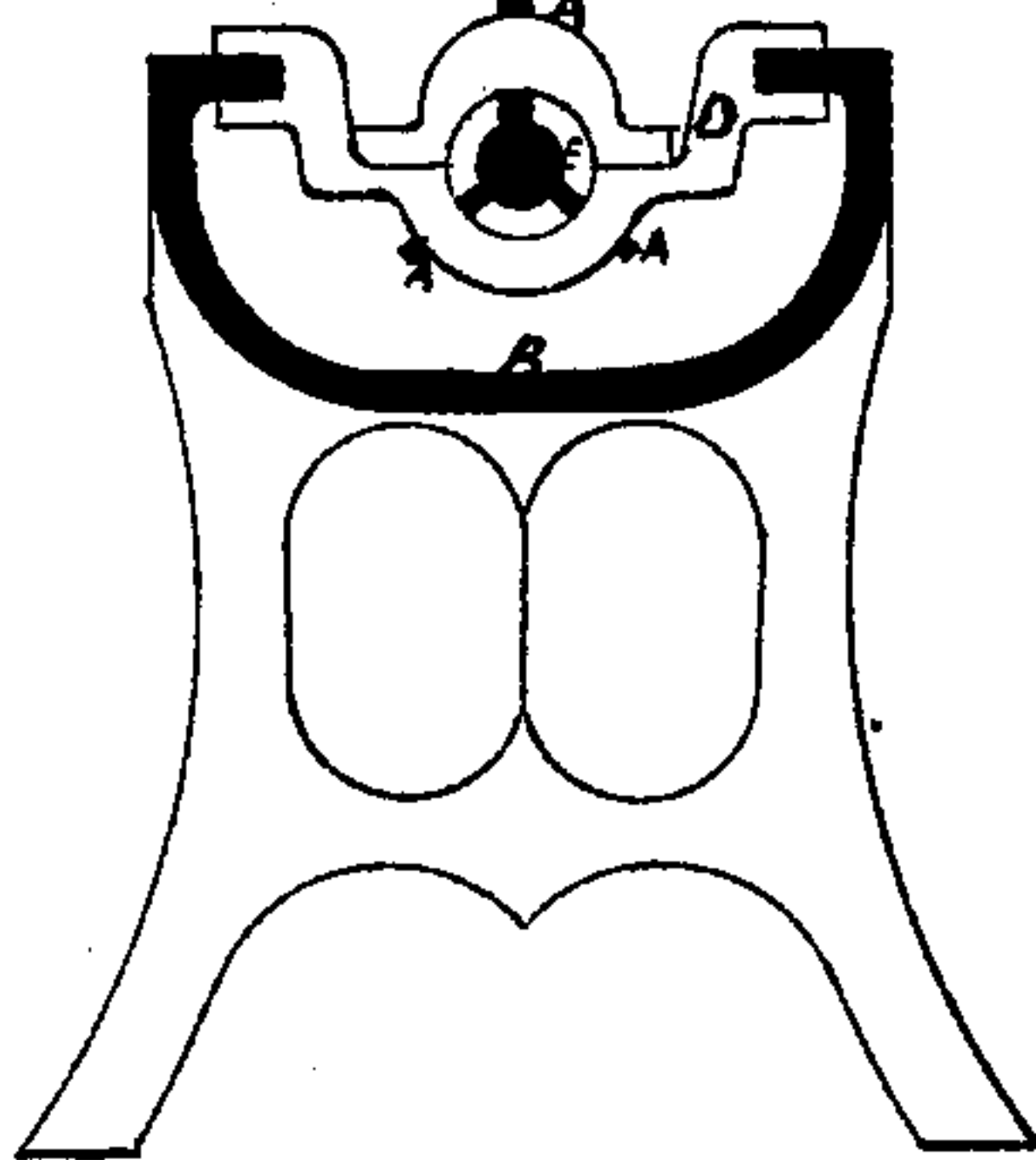


Fig. 4.

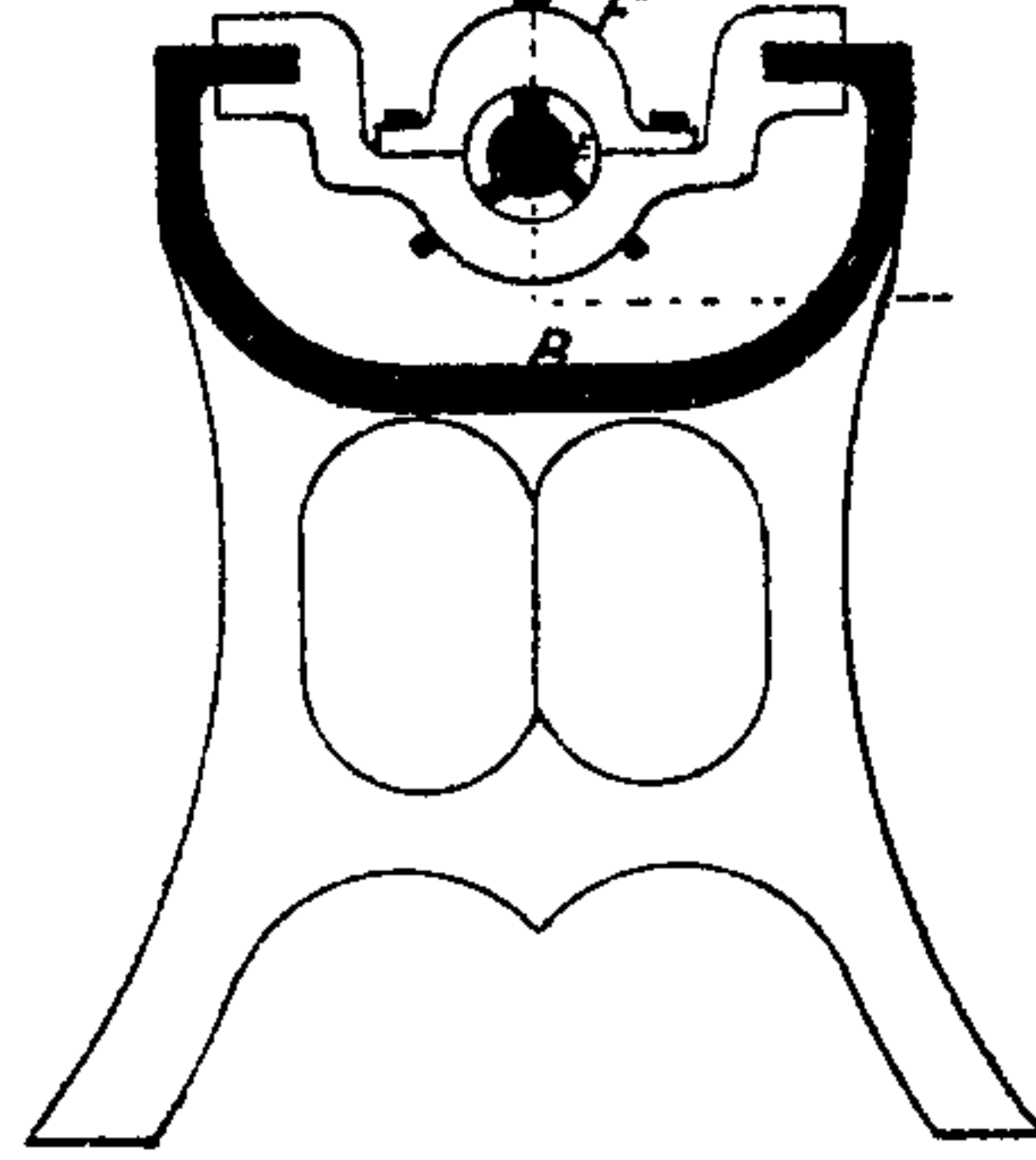
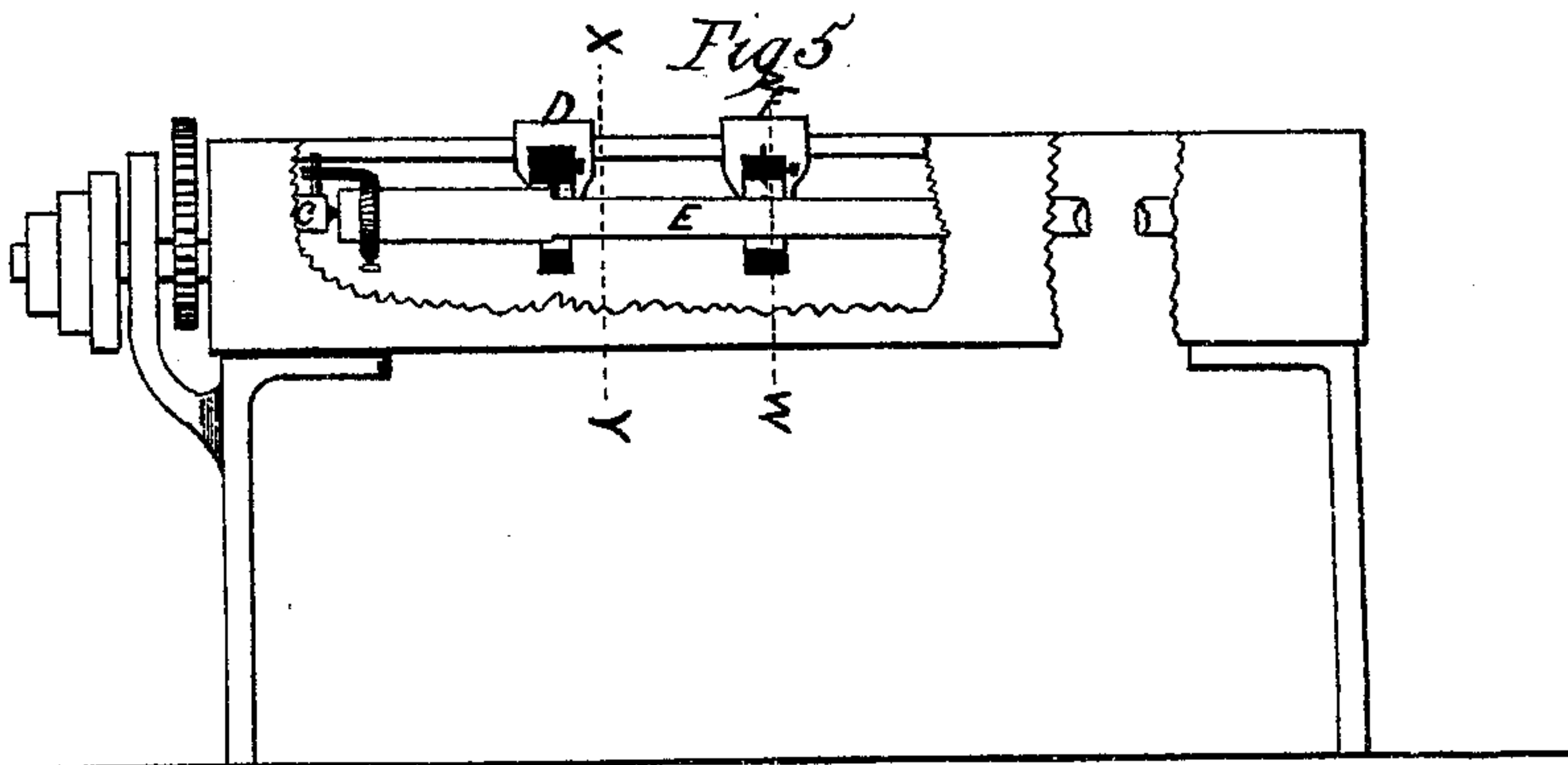


Fig. 5.



Claud H. Bayley
Edward H. Furness } "Witnesses"

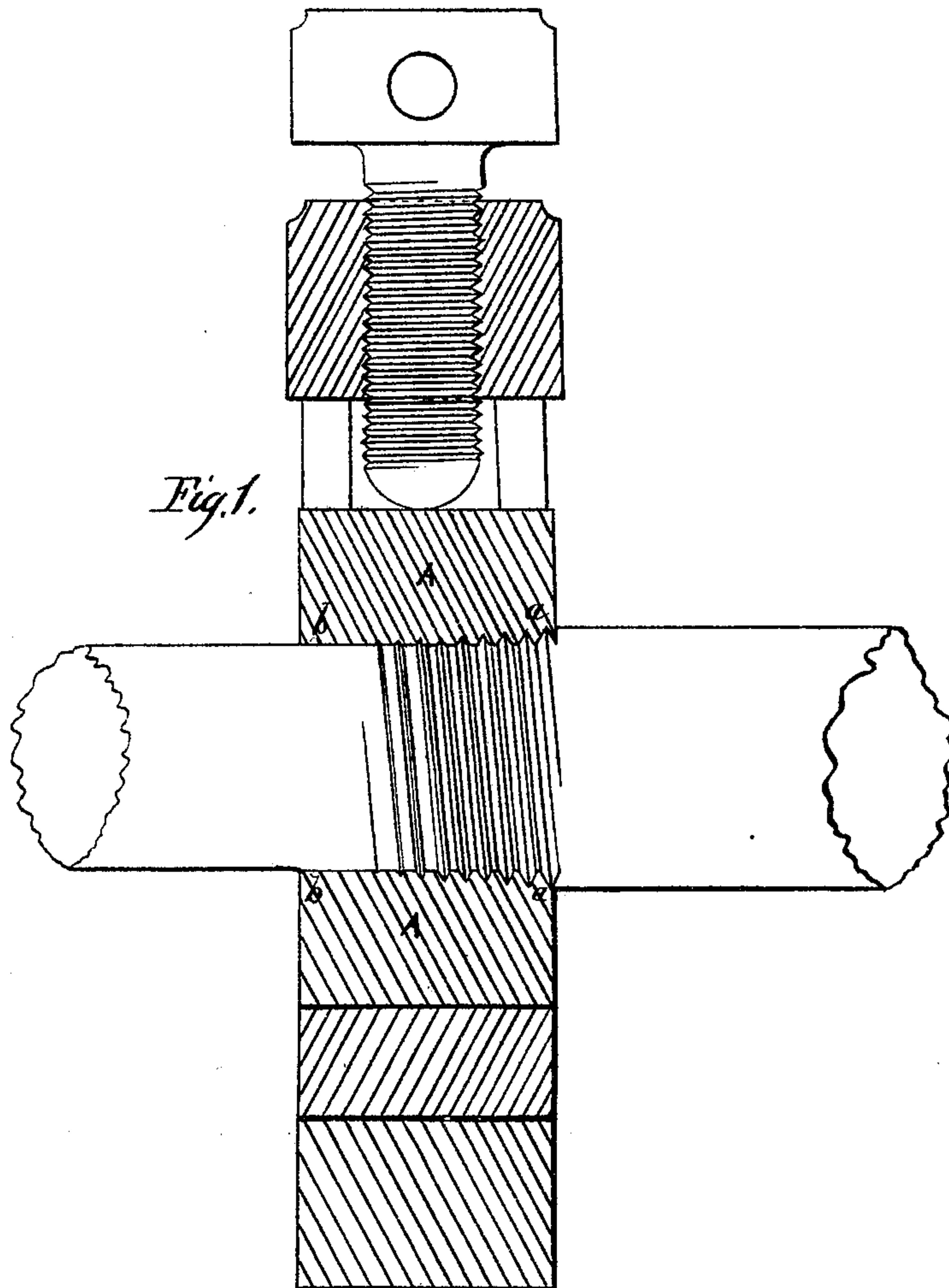
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UNITED STATES PATENT OFFICE.

JOHN FENSOM, OF TORONTO, CANADA.

IMPROVEMENT IN MACHINES FOR TURNING SHAFTING.

Specification forming part of Letters Patent No. 126,538, dated May 7, 1872.

SPECIFICATION.

I, JOHN FENSOM, of the city of Toronto, in the county of York, Province of Ontario and Dominion of Canada, engineer, have invented certain new and useful Improvements in Tools for Turning Shafting, &c., of which the following is a specification:

Nature and Objects of the Invention.

The first part of my invention relates to an improved cutter or die for turning shafting, &c.; and consists in forming the front cutting-edge of the same like a chaser, the thread of which gradually decreases in depth until it runs completely out, leaving the back portion a broad cutting-edge, which is in the same plane as the top of the first thread. By this means the thread which is commenced by the front cutting-edge is utilized as a feeder for the cutter, and the thread so formed is gradually cut away as the threads in the cutter become less deep, and the threads are completely removed by the back cutting-edge. The effect of cutters thus formed is to distribute the cutting-points, and thereby reduce the friction upon them, while at the same time the cutter is self-feeding. The second part of my invention relates to a trough-shaped lathe-bed, constructed without the ordinary heads, the spindles fitting through each end of the lathe-bed in such a manner that the centers are below the water-line when the trough-shaped bed is filled with water, the object of this part of the invention being to keep the metal under operation thoroughly lubricated and perfectly cool while being turned; but that the nature of my invention may be fully understood I will proceed to describe the same more in detail by aid of the accompanying drawing.

Description of the Drawing.

Figure 1, Sheet 1, represents an elevation and plan of cutters A, full size, arranged according to my invention. Fig. 2 represents an end view of a lathe-bed, B; Fig. 3, a sectional end view of the same taken through the line X Y. Fig. 4 is a sectional end view taken through the line Z W; and Fig. 5 is a side elevation, with part of the side of the apparatus broken away, and showing the tool-rest D and the steady rest F in section. Fig. 1, Sheet 2, represents a sectional end view of an ordinary

blacksmith's stock, full size, in which the cutters A are represented in the act of turning a piece of shafting.

It will be seen that the front *a* of the cutters A commences with a full thread, which gradually decreases in depth until it runs completely out and leaves the back portion *b* a broad cutting-edge, which entirely removes the thread cut or formed by the front *a*. By this means blacksmiths and others who do not usually possess machinery for turning are enabled with my dies or cutters A to employ their ordinary "stock" for that purpose.

It is unnecessary for me to enumerate the various ways in which my improved dies or cutters A may be applied, either singly or in any number. They may be applied to common or bolt-cutting lathes with or without the ordinary feeding-gear, as required; and, in fact, the principle of my cutters can be adapted to any description of turning.

I will now describe the second part of my invention, which consists of a trough-shaped lathe-bed, constructed in such manner that the spindle revolves within the bed and below the line of the water which the same is intended to contain when the machine is in operation.

By reference to the drawing on Sheet 1 it will be seen that the spindle passes through the end of the bed B, which is fitted with suitable journal-boxes, &c., and the tool-rest D is so shaped that the metal being turned may be operated upon. The position of the shaft E is shown by the drawing.

Having thus described my invention, and means by which the same may be carried into effect, I would have it understood that I do not confine myself to the precise angle shown in the drawing, at which the front cutting-edge *a* of the cutter A decreases in depth as the same may be varied without departing from the peculiar character of my invention; nor do I claim any peculiar design for the bed B or tool-rest D, so long as the main features shown and described are adhered to; nor do I confine myself to any kind of turning-tool for the rest D; but

What I do claim is—

1. A cutter or die, A, with a thread cut in the front portion *a* thereof, which gradually decreases in depth until it completely runs out, leaving the back portion *b* broad and in the

same plane as the top of the first thread, substantially as and for the purpose specified.

2. I claim the combination with the trough-like lathe-bed B and the head and tail spindles which pass through the ends thereof below the level to which the said bed may be filled with water, the sliding tool-rest D, and

the steady rest F, substantially as and for the purpose specified.

City of Toronto, 24th day of October, 1871.
JOHN FENSOM.

Witnesses:

DONALD C. RIDOUT,
CLAUD. L. CAYLEY.