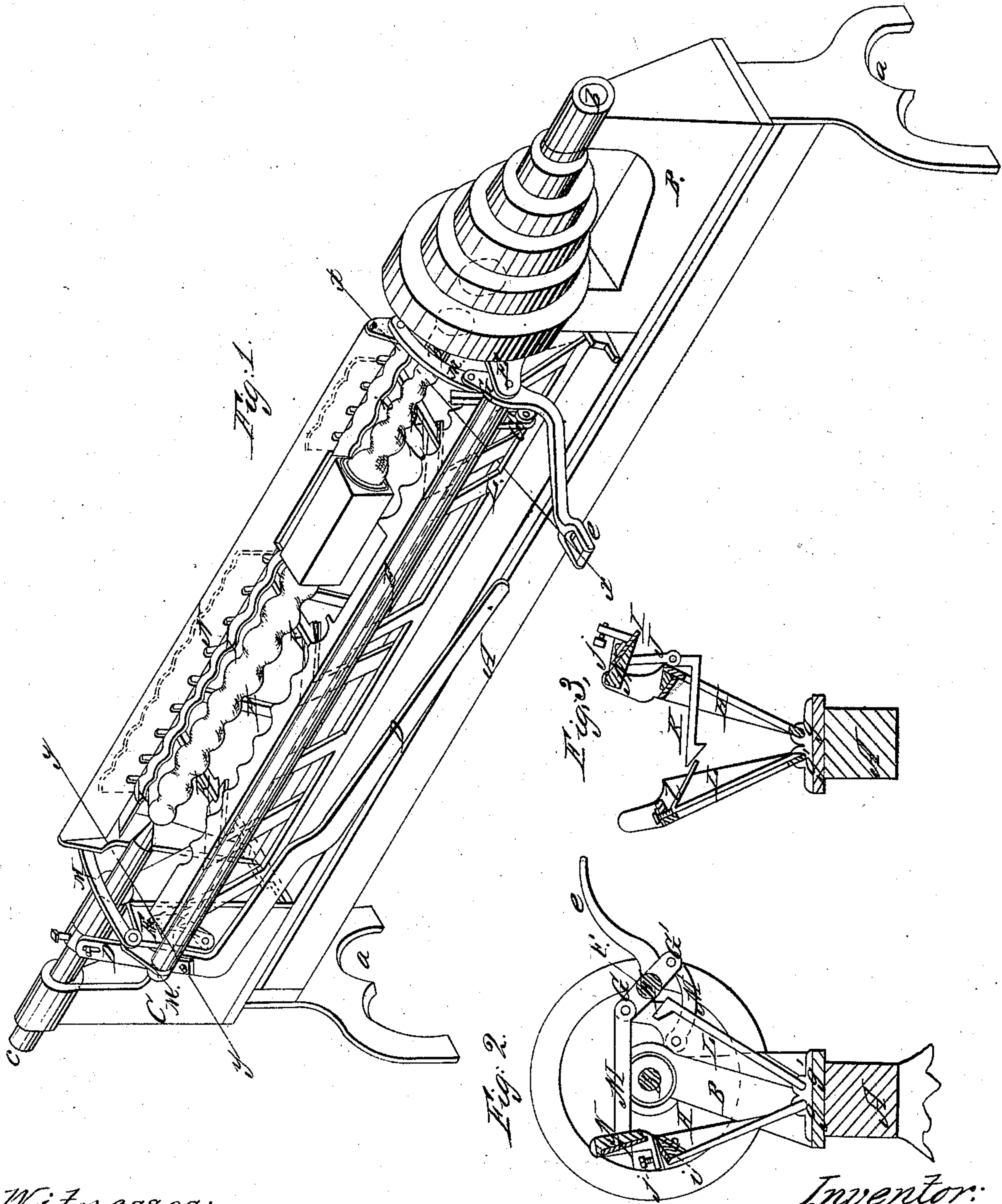


*Norris & Black.*

*Gage Lathe.*

*N<sup>o</sup> 99,696.*

*Patented Feb. 8, 1870.*



Witnesses:

R. S. Mallory  
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# United States Patent Office.

NATHAN NORRIS, CHARLES S. BLACK, AND HORACE S. BLACK, OF BUCHANAN, MICHIGAN.

Letters Patent No. 99,696, dated February 8, 1870.

## IMPROVEMENT IN WOOD-TURNING LATHE.

The Schedule referred to in these Letters Patent and making part of the same.

### To whom it may concern:

Be it known that we, NATHAN NORRIS, CHARLES S. BLACK, and HORACE S. BLACK, of Buchanan, in the county of Berrien, and State of Michigan, have invented a new and useful Improvement in Gauge-Lathes; and we do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, and being a part of this specification, in which—

Figure 1 is a perspective view of our improved lathe;

Figure 2 is a cross-section, on the line  $xx$ , in fig. 1, showing the mechanism for moving the vibrating frames to and from the work; and

Figure 3 is a cross-section, on the line  $yy$ , in fig. 1, showing the method of operating the steady-rest, with the cutter thrown up for sharpening.

Like letters refer to like parts in each figure.

The nature of this invention relates to an improved method of constructing and operating gauge-lathes for turning bedposts, table-legs, balusters, and other like articles, from bolts of wood, and consists in the employment of a cutter, or series of cutters, corrugated to the form of spindle designed to be turned, and bolted to a cutter-bar, pivoted in a vibrating frame; in a mechanism for bringing the cutters up to the bolt centred on the spindles, in a series of steady-rests which automatically move up with the cutters, and support the spindle being turned, and in the general arrangement of its parts, as hereinafter more fully shown and set forth.

In the drawings—

A represents the bed-plate of our lathe, supported by proper standards,  $a$ , and having attached at either end the head-block B, and tail-block C, of ordinary construction. In the head and tail-blocks are placed the head-spindle  $b$  and tail-spindle  $c$ , the latter being moved laterally in its sleeve by a lever, D, or other appropriate device.

Projecting from the front side of the head and tail-blocks are brackets E, in which is journaled the rock-shaft F, operated by a lever,  $e$ , to which a treadle may be attached, if desired. The rock-shaft is also provided with upward-projecting arms G, and downward-projecting arms G'.

H is a vibrating frame, pivoted in boxes  $g$ , in the bed-plate. In the upper corners of this frame is pivoted a knife-bar, N, to which are bolted, in sections, corrugated or curved cutters I, which are formed to the shape of the article to be turned. When it becomes necessary to sharpen the cutters, the dogs J, which

drop against the cutter-bar to hold it in place, are withdrawn, the cutter-bar is then swung up, and rests upon the ends of the dogs, as shown in fig. 3.

A throat-iron,  $i$ , whose front edge is made to correspond with the corrugations of the cutters, is secured to and projects inward from the cutter-frame H, forming, with the cutters, a throat, through which the shavings pass. To determine the depth of cut on the ends of the cutter-bar, are brackets, through which pass set-screws  $j$ , abutting against the top of the frame H.

To steady the wood while being turned, steady-rests K, fig. 3, are pivoted to the frame H, and are operated as hereinafter described.

L is a vibrating frame, pivoted in boxes  $g'$ , in the same manner as the cutter-frame H; attached to its top, and projecting inward, are secured inclined planes  $l$ , directly opposite the steady-rests K.

M are links connecting the arms G, of the rock-shaft, with the top of the cutter-frame H, and M' are similar links, connecting the arms G' with the top of the vibrating frame L. By depressing the lever  $e$  of the rock-shaft, the frames H and L will move toward each other, the cutters commencing to take a shaving from the bolt. At the same time, the cam-shaped ends of the steady-rests K, sliding up the inclined planes  $l$ , press against the under side of the wood, and support it until the article is completed. Raising the lever, the frames recede from each other, when the finished article may be removed from the lathe.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The cutters I, secured to the knife-bar N, the same being pivoted in the vibrating frame H, all the parts being constructed, arranged, and operating substantially as shown and described, and for the purpose specified.

2. The combination of the bed A with the head and tail-blocks B and C, rock-shaft F, provided with lever  $e$ , and cams G G', links M M', the vibrating frames H and L, the steady-rests K, and inclined planes  $l$ , when constructed, arranged, and operating substantially as shown and described, and for the purposes herein specified.

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HORACE S. BLACK.

Witnesses:

WILLIAM D. KINGERY,  
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