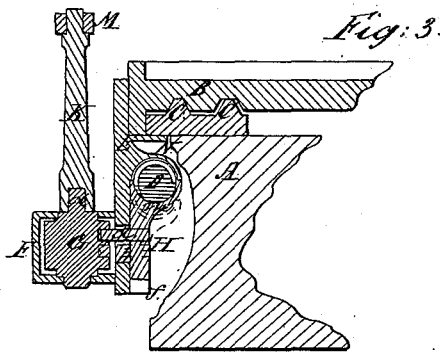
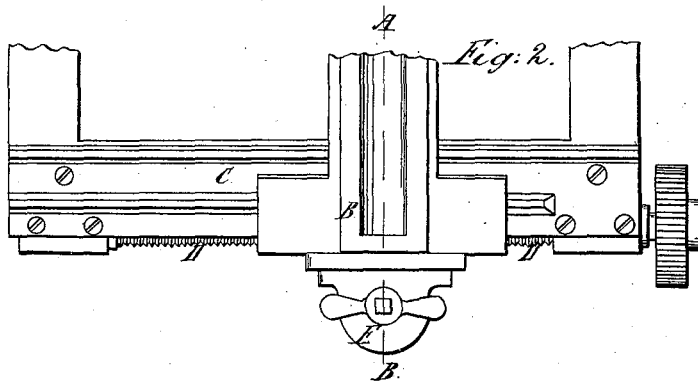
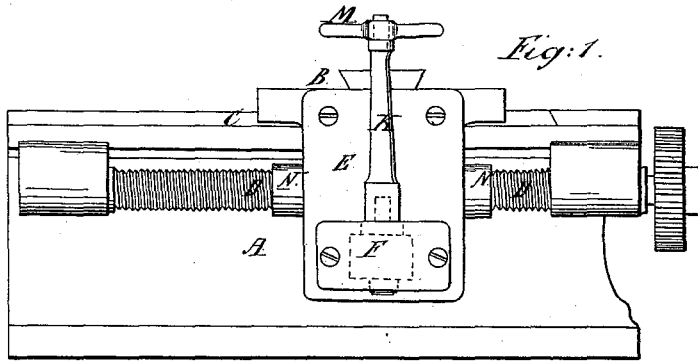


*A. B. Couch,*

*Engine Lathe.*

*No. 89,408.*

*Patented Apr. 27, 1869.*



*witnesses.*  
*Thos. H. Dodge*  
*Chas. H. Bulleigh*

*Inventor*  
*Alfred B. Couch*

# United States Patent Office.

ALFRED B. COUCH, OF WORCESTER, MASSACHUSETTS.

Letters Patent No. 89,468, dated April 27, 1869.

## IMPROVEMENT IN ENGINE-LATHES.

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

### Know all men by these presents:

That I, ALFRED B. COUCH, of the city and county of Worcester, and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Engine-Lathes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a rear view of so much of an engine-lathe as is necessary to illustrate my improvements;

Figure 2 represents a plan view of the same; and

Figure 3 represents a transverse section, on line A B, fig. 2.

To enable those skilled in the art to which my invention belongs, to make and use the same, I will proceed to describe it more in detail.

In the drawings—

The part marked A is the frame of the lathe;

B, the sliding carriage, which supports the tool-rest;

C, the ways; and

D, the leading-screw, at the back of the lathe; all of which may be constructed in the usual manner, and therefore require no further description.

To the rear edge of the carriage B is fastened, or secured a metallic plate, E, which extends down below the screw D, and has secured upon its outer side a box, F, in which works a helical cam, G, while upon its inner side is arranged a slide-nut, H, which works between flanges, *f*, projecting inwards from the edges of plate E.

A slot, *b*, is formed in the plate E, through which passes a pin, *a*, which projects from the sliding nut H, and enters the helical groove in the cam G, as fully indicated in fig. 3, whereby, as the cam is turned, nut H will be elevated or depressed, as the case may be, thereby throwing the thread *m*, of nut H, in contact, or mesh with the screw D, or out of mesh therewith, as indicated by red and dark lines, fig. 3.

An upright shaft, K, extends from the cam G to a convenient height above the carriage B, its upper end being square, to fit the handle M, by which the shaft and cam may be turned, to operate nut H, or, if preferred, the handle M may be dispensed with, and shaft K turned by the ordinary wrench, which is used upon other parts of the lathe.

The lower end of shaft K fits a rectangular-headed stem, *d*, projecting from the top of the cam G, whereby cam G will be turned when the shaft is turned, while said shaft can be easily detached, if desired.

Plate E is furnished with guards, N, which extend over the screw D, to shield and protect nut H from chips and dirt.

In this instance a half-nut only is used on the under

side of the screw, but an additional half-nut at the top of the screw may be employed, if preferred, by introducing a slide nut, H, above the screw D.

In this last arrangement, cam G should be widened, to admit of a second and upper helical groove being formed thereon, but in an opposite direction to the lower one, so that the top half of the nut would be moved up, and the bottom half moved down, to throw the screw or nuts out of gear, or mesh, and *vice versa*.

In lieu of the cam G, a circular plate may be substituted, having spiral grooves, for the pins *a* to work in, the plate being connected with the upright shaft K, by means of a pair of mitre-gears, but I prefer the method shown in the drawings, and first above described.

By the use of the vertical shaft K, and the arrangement whereby the simple turning of said shaft will throw in or out of action the nut H, the operation can be performed very conveniently from the front side of the machine, and that, too, by a mere lad, thus obviating the objections to the old modes, which required the attendant to pass around the machine, to detach or connect the parts with ease and convenience.

It will be seen by those skilled in the art to which my invention belongs, that my present invention relates particularly to that class of engine-lathes in which there is a screw, or other feeding-apparatus, upon the front side of the lathe, and a screw, independent of such front screw, on the back side of the lathe, or side opposite to the workman, and intended solely for use in cutting, or chasing screw-threads, and the absence of any ready and convenient device, by which the workman can control the nut, situated on the back, or side of the lathe opposite to him, has been found a serious inconvenience, which is entirely obviated by my arrangement of the vertical shaft, as shown in the drawings, which, as before stated, enables the attendant to operate the nut without leaving the front side of the lathe, or straining himself by over-reaching or climbing upon the machine.

Having described my improved engine-lathe,

What I claim therein as new, and of my invention, and desire to secure by Letters Patent, is—

1. The arrangement of the vertical rotating shaft, whether detachable or not, with the helical cam, or its equivalent, and pin *a*, and the slide-nut, in the manner described.

2. The construction and arrangement for joint operation of plate E, shaft D, slide-nut H, pin *a*, helical cam G, and shaft K, as and for the purposes shown and specified.

ALFRED B. COUCH.

Witnesses:

THOS. H. DODGE,  
CHAS. H. BURLEIGH.