(No Model.)

O. E. PERRIGO.

ENGINE LATHE.

No. 499,929. Patented June 20, 1893.

Fig. 1

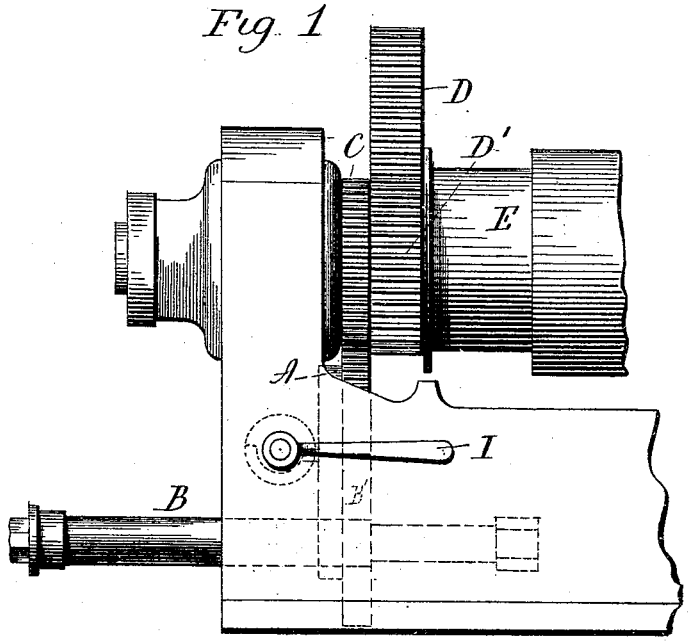


Fig. 2

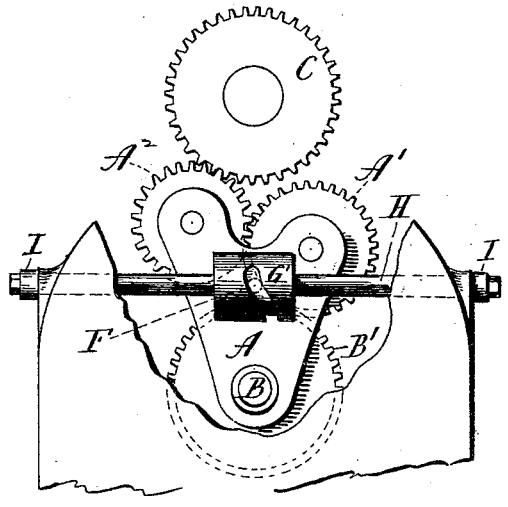
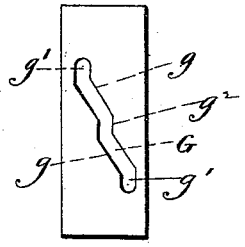


Fig. 3



Witnesses
J. H. Hennaway
Lillian D. Kelley

Oscar E. Perrigo
Inventor

UNITED STATES PATENT OFFICE.

OSCAR E. PERRIGO, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE NEW HAVEN MANUFACTURING COMPANY, OF SAME PLACE.

ENGINE-LATHE.

SPECIFICATION forming part of Letters Patent No. 499,929, dated June 20, 1893.

Application filed September 19, 1892. Serial No. 446,255. (No model.)

To all whom it may concern.

Be it known that I, OSCAR E. PERRIGO, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Engine-Lathes, (Case B;) and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a broken view in side elevation of a lathe constructed in accordance with my invention; Fig. 2, a broken end view thereof; Fig. 3, a view in the nature of a diagram showing the development of the cam and the slot therein.

My invention relates to an improvement in engine-lathes, the object being to produce simple and effective means for reversing the rotation of the "stud" by means of which power is transmitted to the feed-rod.

With these ends in view, my invention consists in an engine lathe having certain details of construction and combinations of parts as will be hereinafter described and pointed out in the claim.

In carrying out my invention, I fulcrum a yoke A, upon the shaft or arbor B, of the lathe, which is ordinarily known as the "stud," the said yoke standing vertically above the said "stud" on which it has but limited swinging movement. The said yoke carries at its upper end, which is wider than its lower end, two gears A′ and A^2, differentiated in size, but meshing into each other, and both being adapted to mesh, though not at the same time, into the spindle gear C, which is of usual construction, as are also the back gears D and D′, and the cone E. The said spindle-gear C, forms so far as the gears A′, A^2 and B′, shown herein, are concerned, the driving gear, and while I shall probably so employ it, I do not limit my invention to it, as some other gear might be used to take its place. The yoke is also provided with an inwardly projecting pin F, which enters a cam slot G, partially encircling the periphery of a cam G′, mounted on a horizontal operating-shaft H, which is furnished at one end with an operating-lever I, as plainly shown in Fig. 1 of the drawings. The said cam slot is shaped so that, according to the direction in which the cam is turned, it will operate to throw or swing the yoke in one direction or the other, whereby the gear A^2, is intermeshed with the gear C, while the gear A′, is cut out, or vice-versa, and whereby the "stud" B, is reversed in the direction of its rotation, the said "stud" carrying a gear B′, fixed to it, corresponding exactly in size to the gear C, and constantly meshed into by the gear A′. The cam slot G, before mentioned, extends in opposite directions from its center, and may be said to be composed of two inclined portions $g\,g$, and two rests $g'\,g'$, located at the ends of the said inclines respectively, and an intermediate rest g^2, located between the same. The said rests of the cam are straight, and co-operate with the pin of the yoke in locking the yoke at the limits of its throw, and also in its intermediate position, in which both of its gears are disengaged from the spindle gear C. It will be observed that the cam G′ is made independent of and applied to the operating-shaft H, than which it is considerably larger in diameter. By this construction I avoid weakening the shaft by cutting into it, and am unhampered in giving the slot the right throw for securing the best results.

My improved reversing mechanism above described may be used in connection with any of the ordinary gears for operating the feed-rod and feed-screw of the lathe, and as such gears are well known, it has not seemed necessary to me to show my invention in connection with any of them.

I am aware that it is old to provide a lathe with an operating-shaft adapted to be turned by hand, and having a cam-slot receiving a pin mounted in a yoke hung on the "stud" of the lathe, and carrying two gears meshing with each other, one of the said gears also meshing into a gear fixed to the "stud" and both of them being alternately engaged with the driving-gear according to the position of the yoke which is shifted for the engagement of the gears carried by it with the said driving-gear, through the medium of the said shaft, cam-slot and pin. I do not, therefore, claim that construction broadly, but only my particular construction.

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

In an engine-lathe, the combination with the "stud" thereof, and a gear mounted thereupon, of a yoke swung on the said "stud," and extending above the same and carrying a pin, and two gears meshing into each other, one of the said gears also meshing into the gear fixed to the said stud; a driving-gear located above the said yoke, in position to be intermeshed with one of the gears thereof, according to the position of the yoke; an operating-shaft adapted to be operated by hand, and a cam made independent of and applied to the said shaft than which it is larger in diameter, and constructed with a cam-slot shaped at its ends and midway of its length to form rests, and receiving the pin of the yoke, substantially as set forth, and whereby the yoke is locked in its intermediate position as well as in each limit of its swinging movement.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

OSCAR E. PERRIGO.

Witnesses:
ROBERT A. BROWN,
GEO. D. SEYMOUR.