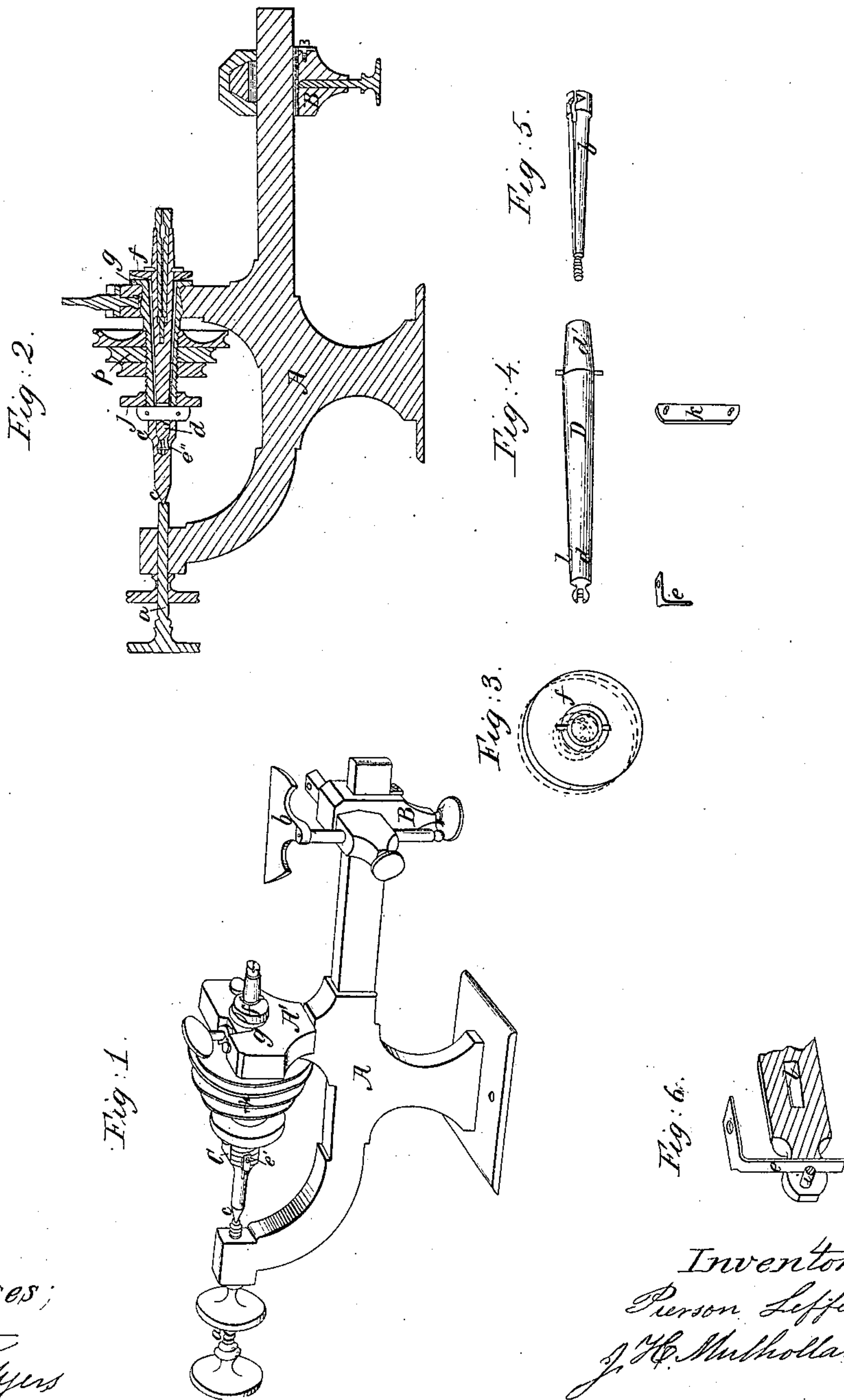


Leffel & Mulholland *Watchmakers' Lathe.*

N^o 25,339.

Patented Sep. 6, 1859.



Witnesses;
S. S. Christie
J. Myers

Inventors;
Person Leffel
J. H. Mulholland

UNITED STATES PATENT OFFICE.

P. LEFFEL AND J. H. MULHOLLAND, OF SPRINGFIELD, OHIO.

METHOD OF CENTERING IN WATCHMAKERS' LATHES.

Specification of Letters Patent No. 25,339, dated September 6, 1859.

To all whom it may concern:

Be it known that we, P. LEFFEL and J. H. MULHOLLAND, of Springfield, in the county of Clark and State of Ohio, have invented
5 a new and useful Improvement in Watchmakers' Lathes; and we do hereby declare that the following is a full and clear description thereof, reference being had to the accompanying drawings and to the letters
10 of reference marked thereon and made to form a part of this specification.

The object of our invention, is to construct a lathe having all the advantages of a vibrating mandrel for finding centers, and
15 which at the same time may be adapted to secure said center when found, with certainty, and without liability of requiring further adjustment; and the nature of our invention relates, first to the construction of
20 a mandrel, and its arrangements within a rotating socket, in such manner that its outer end may be allowed sufficient vibration for the finding of centers; 2d, a provision for securing said mandrel in its proper
25 place for use as hereinafter set forth and described.

In reference to the accompanying drawings, Figure 1, is a perspective view of the lathe with all its parts arranged for operation. Fig. 2, is a longitudinal sectional elevation of the same. Fig. 3, is a sectional
30 end view showing specially the rocking collar. Fig. 4, represents the mandrel with its key and spring in perspective. Fig. 5 is a perspective view of the clamp. Fig. 6—is a sectional view of the mandrel showing specially the arrangement of its spring.

(A.) represents the bed of the lathe, provided as is usual with the step (a) sliding
40 carriage (B) and rest (b).

(C) is the spindle, one end (c) of which is pointed and adjusted to fit the step (a) the other end is formed hollow so as to form a socket for the mandrel (D) and has bearing in the post (A') of the bed (A). This
45 said socket, is formed in such manner as to fit the inserted end (d) of the mandrel quite closely, while at its mouth it allows free vibration of the outer end (d') of the mandrel.
50 drel.

(e) is an adjustable spring screwed to the spindle (C) at (e') and passing through a slot in the spindle (C) and also through a slot (e'') of the mandrel forward of the pin

(i). By means of said spring the mandrel, 55 while it is allowed to vibrate, is retained in the position at which the center is found, until the mandrel is secured for the operation of turning.

(f) fully shown in Figs. 1, 2 and 3, is a 60 rocking collar fitted loosely upon the mandrel (D), in such manner that it may impinge against the shoulder (g) of the spindle (C), and secured in its proper position by means of pins (f') as clearly shown in Fig. 65 2, so that as the mandrel vibrates the collar (f) may always be adjusted to its proper bearing against the shoulder (g).

(k) is a key secured in the spindle (C) and made to pass through the slot, (l) of the 70 mandrel.

(j) is a jam nut made to screw upon the spindle (C) by means of which through the medium of the key (K) and collar (f) the mandrel (D), may be secured for the opera- 75 tion of turning.

(h) is a clamp for holding the pivot or article to be turned.

(p) is a graduated pulley by means of which the lathe may be operated. 80

Having described the construction of our invention its operation may be set forth as follows, the article to be turned being secured as is usual in the clamp (h) and the nut (j) turned in the direction of the pulley 85 (p) so that the mandrel (D) may vibrate, the rest, (b) will be placed in proper position for use, the lathe will then be operated so as to give rapid rotation to the mandrel (D). The operator will then hold a graver 90 or other suitable instrument against the article to be turned, which by means of the vibration of the mandrel will immediately secure the proper center for the operation of turning, the mandrel is retained in this posi- 95 tion by means of the spring (e) which hold the collar (f) slightly against the shoulder (g), the nut (j) will now be turned against the key (k) thereby forcing the mandrel inwardly and causing the collar (f) to press 100 firmly against the shoulder (g) in such manner as to secure the mandrel rigidly in this position until the process of turning is complete.

Among the advantages of our invention 105 the following will be readily seen, first the certainty of securing the position of the mandrel properly, after the center has been

found without loss of time, 2d the operator is enabled to inspect his work closely and use a glass of short focus.

5 We do not wish to be understood as claiming broadly the finding of centers by means of a vibrating motion, of the device which secures the article to be turned, as we are aware that devices embracing such motion are in use; but,

10 Having described the construction and operation of our invention, what we do claim and desire to secure by Letters Patent, is—

1. A vibrating mandrel arranged within a
15 socket or hollow spindle in such manner that its inserted end may fit closely within said

socket and its outer end allowed to vibrate substantially as described for the purposes set forth.

2. In combination with the vibrating man- 20 drel (D) we claim the rocking collar (f) spring (e) key (k) and nut (j) all constructed and arranged to operate substantially as described for the purposes set forth.

In testimony of which invention we have 25 hereunto set our hands.

PIERSON LEFFEL.
J. H. MULHOLLAND.

Witnesses:

I. S. CHRISTIE,
A. MYERS.