

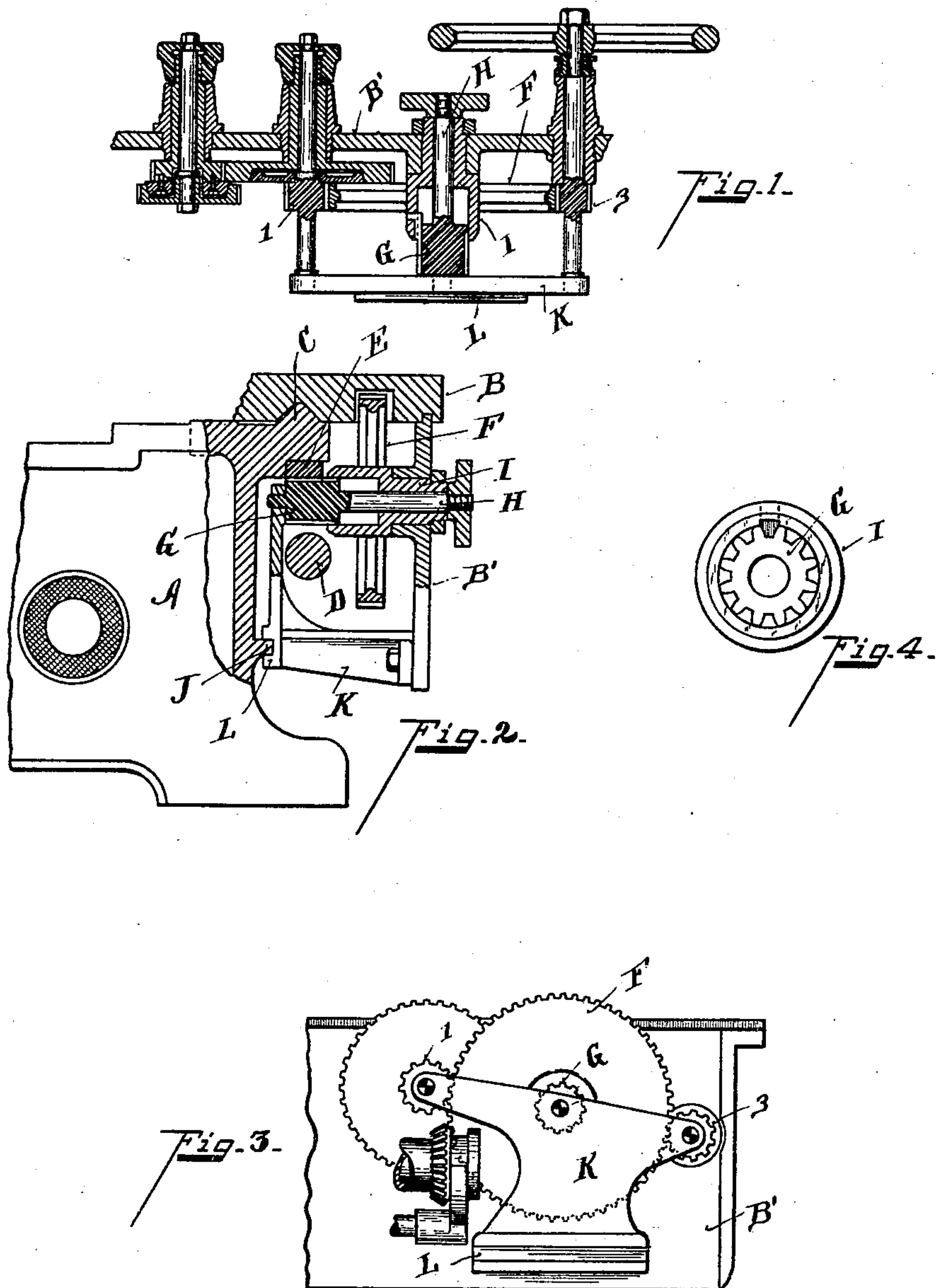
No. 680,606.

Patented Aug. 13, 1901.

W. LODGE.
ENGINE LATHE.

(Application filed May 8, 1901.)

(No Model.)



Inventor

Witnesses

Oliver B. Kaiser
Pearl M. Michael

William Lodge

By Wood & Wood. Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM LODGE, OF CINCINNATI, OHIO, ASSIGNOR TO THE LODGE & SHIPLEY MACHINE TOOL COMPANY, OF SAME PLACE.

ENGINE-LATHE.

SPECIFICATION forming part of Letters Patent No. 680,606, dated August 13, 1901.

Application filed May 6, 1901. Serial No. 58,990. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LODGE, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Engine-Lathes, of which the following is a specification.

My invention relates to an improvement in the construction and arrangement of the bed and apron of an engine-lathe, whereby the parts are improved in strength and efficiency and the operation rendered more perfect.

My invention is an improvement along the lines of my previous invention shown, described, and claimed in Letters Patent of the United States No. 643,190, granted February 13, 1900.

The features of my invention are more fully set forth in the description of the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a horizontal section of my improvement. Fig. 2 is a sectional vertical section through the apron and bed, showing my improvement. Fig. 3 is an inside elevation of the apron detached from the bed, showing my improvement attached to the apron. Fig. 4 is an end view of the pinion shown in Fig. 2 for engaging the rack of the bed.

A represents the lathe-bed; B, the carriage; B', the apron; C, the bed-rails for the carriage, and E the rack on the lathe-bed.

F represents the spur-gear constituting one of the train of apron-gears, which are driven from the lead-screw D. The connecting-train of gears is not shown, as it forms no part of this invention.

G represents the pinion for engaging the rack and driving the apron. This pinion is constructed as follows: I represents the hub of the gear-wheel F, the said hub journaling in the apron B'. Fitting within this hub, so as to be longitudinally movable therein, is this driving-pinion G, mounted upon a stud H, but keyed to the said hub I. By means of this stud H the gear may be longitudinally thrown into or out of mesh with the rack by projecting the said stud and gear from the hub I or by withdrawing them, the said pinion G being fixed to turn with gear F. By

this means when the lead-screw is in engagement with the half-nuts for screw-cutting this gear G may be withdrawn into and housed within the hub I of the gear F and so disconnected from the rack; otherwise the movement of the apron on the bed would cause the gear to revolve idly, this pinion G and the gear F, as well as the intervening train of gears between the lead-screw and gear F, causing noise, wear, and waste motion.

J represents a rail formed on the lathe-bed under the rack and projected laterally.

K represents an L-shaped bracket having the tread L formed thereon engaging and riding on the said rail. This L-shaped bracket is placed with the tread formed in the face and abutting the adjacent side of the lathe-bed. The front end of the L-shaped bracket is bolted to the depending apron B'. The upper face of this bracket opposing the inside of the apron is parallel therewith and also parallel with the vertical edge of the lathe-bed and forms a journal for the studs on which the pinion G journals, and also other pinions of the driving mechanism are journaled in said face of the bracket K. (See Fig. 3.) This bracket-face abutting the lathe-bed is elongated to form these bearings for the gears—say 1, G, and 3. (See Fig. 3.)

The efficiency of the operation, as well as the strength of the parts, it will be seen, is greatly increased by this construction. The travel of the apron is absolutely uniform. Any strain imparted to the apron by the engagement of the pinion with the rack is transmitted to this L-shaped bracket K and resisted or borne by the rail on the lathe-bed. As both the inner and the outer bearings of the train of gears and pinions for guiding the apron are thus taken by the bracket K and sustained by the lathe-bed, it follows that all of this working strain is removed completely from the apron and its depending plate. The travel of the parts is entirely true and free from vibration and undue wear from strain on unsupported parts.

Having described my invention, what I claim is—

1. In an engine-lathe, a lathe-bed provided with a rack, a sliding carriage mounted upon

the bed, provided with a depending apron, driving devices supported thereon engaging the rack, a longitudinal rail supported on the bed in the line of carriage travel, and a
5 bracket formed with a tread engaging said rail, the said bracket being bolted to the apron at a position horizontally opposite said rail, thereby forming a lateral brace between the bed and lower end of the depending
10 apron, substantially as specified.

2. In an engine-lathe, a lathe-bed, a rack, a sliding carriage on the bed, an apron, driving devices supported thereon engaging the rack, a longitudinal rail supported on the
15 lathe-bed in the line of travel of the carriage, and an L-shaped bracket formed with a tread engaging the rail having a vertically-extending leaf in which the inner ends of one or more of the apron-driving devices are jour-
20 naled, and having a horizontally-extended limb secured to the apron, substantially as specified.

3. In an engine-lathe, a lathe-bed provided with a rack, a sliding carriage mounted
25 thereon, an apron, driving mechanism supported on the apron engaging the rack, a longitudinal rail on the lathe-bed in the line of carriage travel, and a bracket formed with a tread engaging the rail and extending up-
30 wardly to form a bearing for one or more of

the driving devices carried by the apron, substantially as specified.

4. In an engine-lathe, the combination of a lathe-bed provided with a rack, a sliding carriage mounted on said bed, an apron, the
35 driving-gear G journaled within the apron, a longitudinal rail supported on the bed in the line of carriage travel, a bracket formed with a tread engaging the rail, the bracket extending upwardly substantially parallel
40 with the side of the lathe-bed, and having a bearing or bearings for one or more of the apron-driving devices, and a pinion G fixed within the hub of the gear-wheel F to turn therewith, and means for extending the said
45 pinion from the hub into engagement with the rack and into engagement with the bearing formed in the bracket, and to be retracted and housed within the hub of the gear F, whereby the driving devices of the apron may
50 be thrown out of driving relation with the rack when the said carriage is being propelled by the lead-screw, substantially as specified.

In testimony whereof I have hereunto set
55 my hand.

WILLIAM LODGE.

Witnesses:

OLIVER B. KAISER,
PEARL MCMICHAEL.