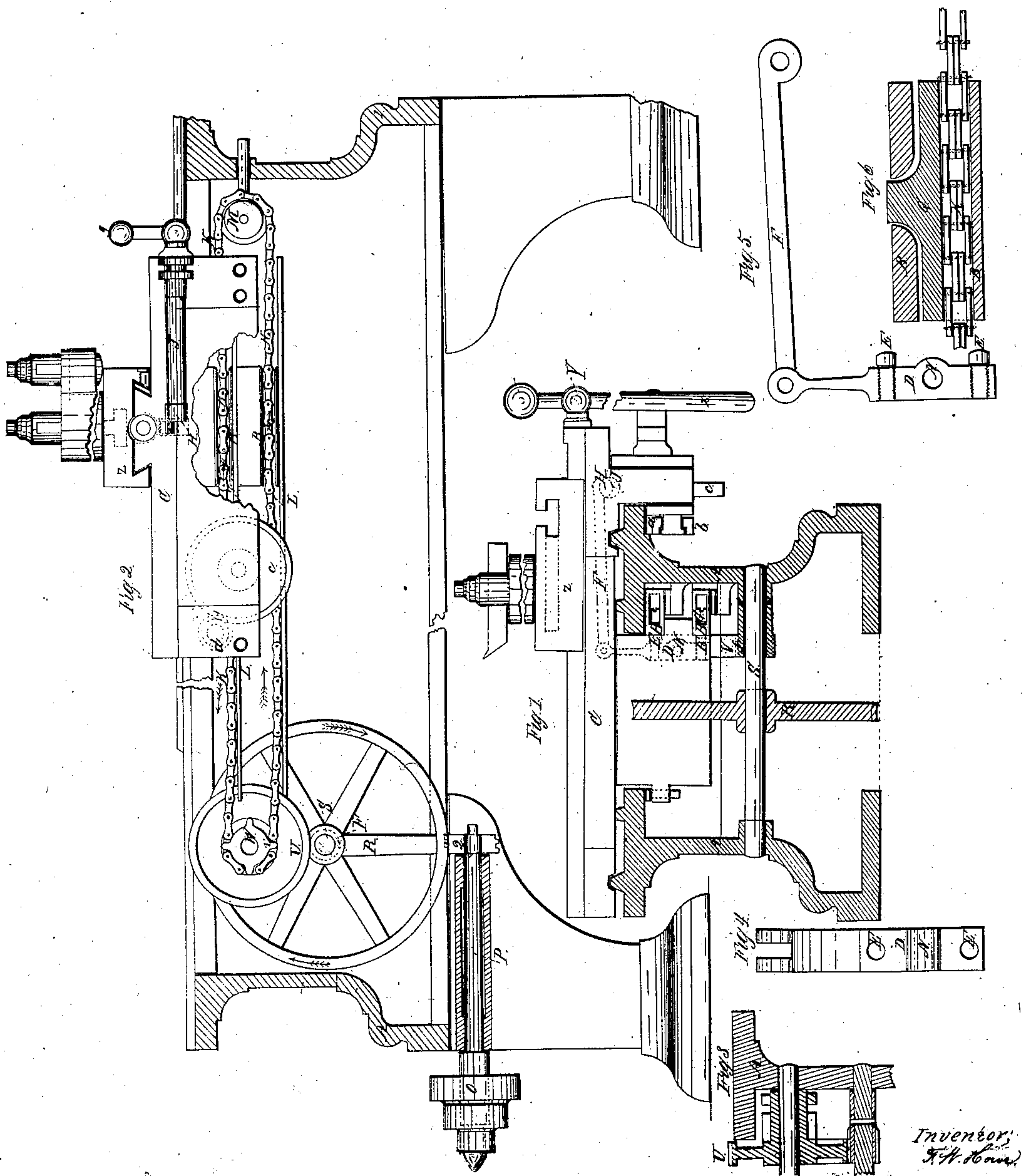


F. W. Howe,

Turning Lathe,

Patented June 21, 1853.

N^o 9,797.



UNITED STATES PATENT OFFICE.

FREDERIC W. HOWE, OF WINDSOR, VERMONT.

MACHINE FOR PLANING METAL.

Specification of Letters Patent No. 9,797, dated June 21, 1853.

To all whom it may concern:

Be it known that I, FREDERIC W. HOWE, of Windsor, in the county of Windsor and State of Vermont, have invented a new and
5 useful Improvement in Engine-Lathes; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, figures, letters, and references thereof.

10 Of the said drawings, Figure 1 denotes a transverse sectional view of the lathe. Fig. 2 is a front and longitudinal sectional view of it.

In the said drawings, A represents the bed
15 or rail frame which supports the tool carriage C, such tool carriage being made in the usual way to slide on longitudinal and parallel rails or guides.

B, B, are friction boxes connected to the
20 tool carriage and having the upper and lower horizontal or parallel portions of the endless chain K extended through them, respectively. This chain extends around a friction roller M and a chain gear V arranged as seen in Fig. 2.

D is a lever, which is arranged vertically just in rear of the boxes B, B, and is made to turn on a fulcrum N, disposed midway between the two boxes. This lever is provided with two set screws E, E, which are
30 made, respectively, to operate against two binders or clamps G, G, that are respectively arranged within the boxes B, B, and in rear of the chain K, as seen in Figs. 1 and
35 6, the latter figure being a horizontal sectional view of one of the boxes and its binder, the extension of the binder through the back of the box being seen in said Fig. 6. The upper arm of the lever D, may be made
40 so that it will spring a little when the eccentric H, is "passing the center." The lever D, is connected with the said eccentric H, by a connecting rod F, which is jointed to the upper arm of the lever, the eccentric H, being made to work on the front end of said rod. A shaft J, carries the eccentric and has a handle or lever I, placed on one end of it and for the purpose of enabling a person to turn the shaft and thereby so move the
50 lever D, on its fulcrum as to bring some one of the screws E, E, to bear against its clamp or binder G, and press it into its box B, and against the part of the chain passing through it, whereby the chain will be
55 clamped to the box. When the chain is in motion in the direction denoted by the arrow

in Fig. 2, the upper part of it when clamped to its box B, will move the tool carriage toward the left, and when the lower part of the chain is clamped to its box B, the chain
60 will impart to the tool carriage a movement toward the right.

L, L, are parallel plates, on which the two parts of the chain are laid and supported during the continuous movements of the
65 chain.

O is a cone driving pulley placed on a shaft P, on which there is an endless screw Q, that works into a worm gear R, fixed on a shaft S. The said shaft S, carries a pinion
70 gear T, that engages with a larger gear U, fixed on the shaft W, that carries the chain gear V. By such mechanism a continuous rotary motion may be imparted to the endless chain.
75

The hand wheel for moving the rest or feed tool carriage is seen at X, while the handle of the mechanism for operating the second tool carriage Z is seen at Y.

In the drawings a stationary rack is seen
80 at a, a rack pinion at b, and two gears at c, d. The pinion gear d, is placed on the shaft of the hand wheel X, while the gear c, is on that of the rack pinion, the object of the whole being to enable the tool carriage
85 to be moved by manual power when necessary.

Fig. 4 represents a side view of the lever D, while Fig. 3 denotes a sectional view of the gear U, and the parts immediately adjacent to it.
90

The endless chain moves continually in one direction through the boxes B, B, and is independent of the primary tool carriage except when clamped to it. The old method
95 of using a chain is to attach each end of it to the tool carriage and reverse the motion by gears at the end of the bedpiece. Such method does not possess the great advantages incident to my improvement, some of
100 which advantages may be said to be, simplicity, durability, and the convenience with which it can be used in lathes of any length and size.

From the above it will be seen that my
105 invention and what I claim consists in combining with the endless chain and the primary tool carriage the two slide boxes B, B, (or their mechanical equivalents) the binders G, G, and rocker lever D and its
110 operative mechanism, (viz. the rod F, eccentric H, shaft J, and lever I,) or the me-

chanical equivalents of such rocker lever and
operative mechanism, the whole being made
to operate substantially in manner as de-
scribed, and for the purpose of enabling a
5 person to readily produce a movement of the
tool carriage either to the right or left,
while the endless chain has a continuous
motion in one direction as set forth.

In testimony whereof I have hereto set my
signature this first day of February, A. D. 10
1853.

FREDERIC W. HOWE.

Witnesses:

H. S. BOYNTON,

CHS. HOUGHTON.