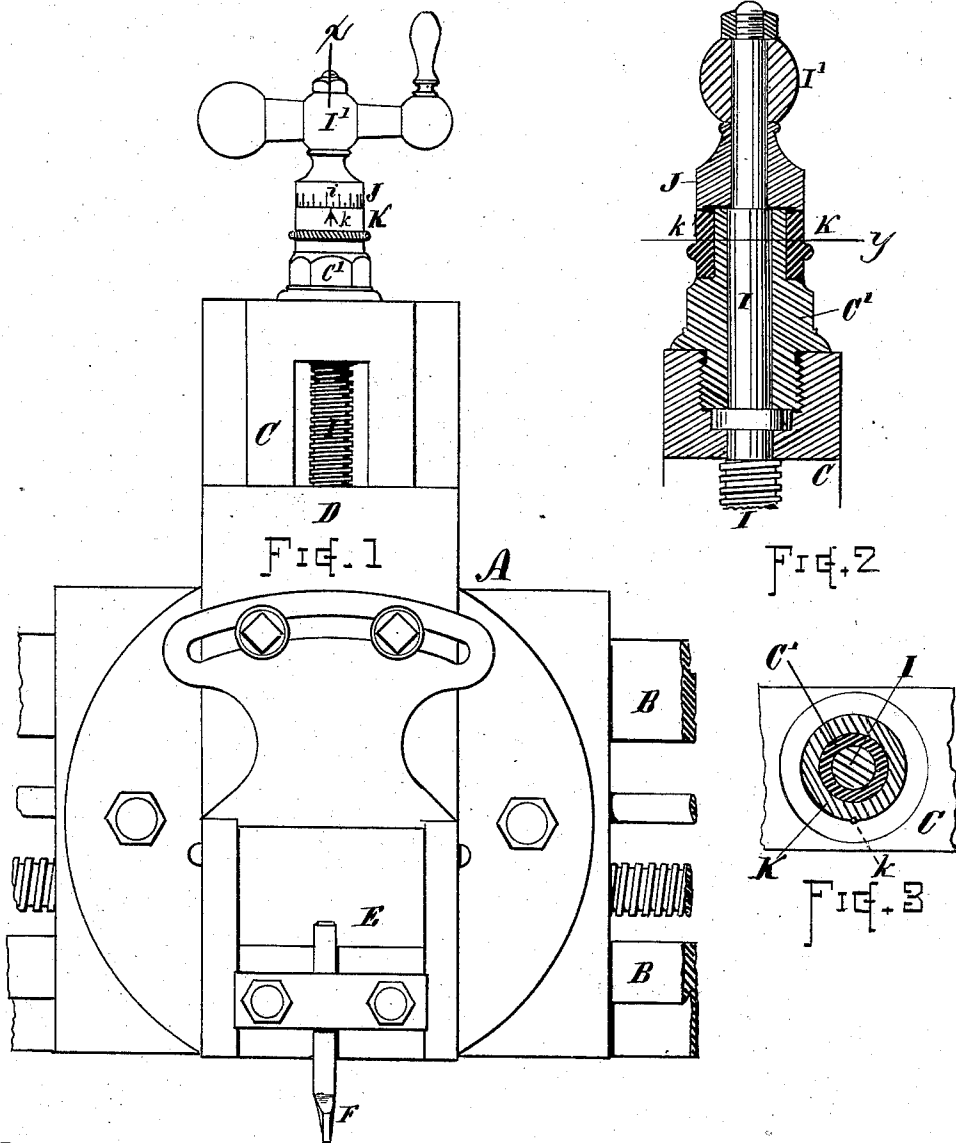


(No Model.)

E. A. THWING.
Metal Planing Machine.

No. 241,448.

Patented May 10, 1881.



Witnesses—
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W. B. Harding

Inventor—
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UNITED STATES PATENT OFFICE.

EDWIN A. THWING, OF WORCESTER, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO EDWIN A. MORSE, OF SAME PLACE.

METAL-PLANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 241,448, dated May 10, 1881.

Application filed November 26, 1880. (No model.)

To all whom it may concern:

Be it known that I, EDWIN A. THWING, of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Metal-Planing Machines; and I declare the following to be a description of my said invention, sufficiently full, clear, and exact to enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification—

My invention relates to certain improvements in the construction of the head or tool-carrying mechanism in metal-planing machines, the objects thereof being to provide means for the ready and accurate adjustment of the tool and tool-holding devices, and to afford facilities for the convenient government of the feed mechanism in the operation of the machine; also, to adapt the said machine for the practical execution of certain classes of work and the obviation of much trouble and labor in its performance.

To this end my invention consists in the combination and arrangement of devices shown in the accompanying drawings, and hereinafter described and claimed.

Figure 1 is a front view of such parts of a metal-planing machine as will illustrate the nature of my invention. Fig. 2 is a vertical section at line *x*, drawn to a somewhat larger scale; and Fig. 3 is a transverse section at line *y*.

A denotes the tool-head, mounted on the cross-bar B and composed of the guiding-frame C, slide-piece D, and clapper-plate E, carrying the tool F, all of which parts may be of the ordinary construction and arranged substantially in the usual manner, and therefore require no further description herein.

I denotes the feeding-screw for raising and depressing the slide-piece D on the guide-frame C, and thus moving the tool F to or from the work.

Upon or working with the screw I, below its hand-crank I', I provide a collar or indicating-surface, J, having a series of graduating-lines, *i*, at its periphery, which lines or marks divide the circumference into a series of spaces corre-

sponding to regular proportions of the revolution or movement of said screw, and bearing corresponding relation to the pitch of its thread.

Below the indicating-surface J and supported on the guide-frame C, or on the bushing C', through which the neck of the screw I passes, I arrange a movable ferrule, K, carrying an index mark or point, *k*, the surface having such index *k* being arranged adjacent to the surface J, so that the lines *i* and index-mark *k* work in juxtaposition with each other. The index-ring K or point *k* is movable on its support, so that it can be adjusted to the right or left to correspond with any of the graduations *i*, as desired. In the present instance it is retained in position by friction of the ferrule or ring K on the bushing C'; but, if desired, a screw or other device may be combined with the index for adjusting and retaining it in adjusted position. The scale J *i* moves with the screw I, while the index K *k* remains stationary with the frame or guide C.

In the operation of my device the tool F is first properly set to the desired position for starting the work. The index-point *k* is then adjusted to one of the graduating-lines *i* by turning the ferrule K on its bearing, as required, after which the proper feeding forward of the tool can be observed by noting the number of graduating-lines *i* which pass the index-point *k* as the screw is turned down, the movement of the tool F according therewith as the proportion of said graduations accords with the pitch of the screw.

The index-point *k* might be formed solid on the part C'; but I prefer to make it adjustable, since it obviates any inaccuracy that may occur by the setting of the tool in its clamp or the position or thickness of the piece of work to be operated upon.

By constructing, combining, and organizing the indicating, adjusting, and tool-carrying mechanism, as herein set forth, the planer is adapted for greater convenience and accuracy of operation, the tool can be readily adjusted without necessity of frequent measurement of the work, and much labor, inconvenience, and annoyance in the general operation of the machine are obviated, while the feed mechanism can be much more accurately governed and

the advancement of the tool in the work more accurately controlled, the improvement being of great practical advantage and utility in the execution of certain classes of work, as when
5 it is desired to plane to a given distance or position, also when planing a series of similar pieces of work, since it is only necessary to note the coincidence of the scale *i* and index *k* at the given position to gage the working of
10 the tool, other measurement being unnecessary after the tool has been first adjusted on the head.

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

15 1. In a metal-planing machine, the combination, with the tool-carrying slide-piece D and its guiding-frame C, provided with the bushing C', of the feed-screw I, journaled within said bushing and provided with a graduated
20 surface or collar, J, fixed thereto adjacent to

the end of said bushing and working in juxtaposition with an index-point borne thereon, substantially as hereinbefore set forth.

2. In a metal-planing machine, the combination, substantially as hereinbefore described, 25 of the tool-carrying slide-piece D, the guiding-frame C, having hub or bushing C', the feed-ing-screw I, journaled within said bushing and having the graduated surface or collar J, and the revoluble ferrule K, supported on said 30 bushing and provided with an index mark or point, *k*, adjacent to said graduated surface, as and for the purposes set forth.

Witness my hand this 23d day of November, A. D. 1880.

EDWIN A. THWING.

Witnesses:

CHAS. H. BURLEIGH,
S. R. BARTON.