

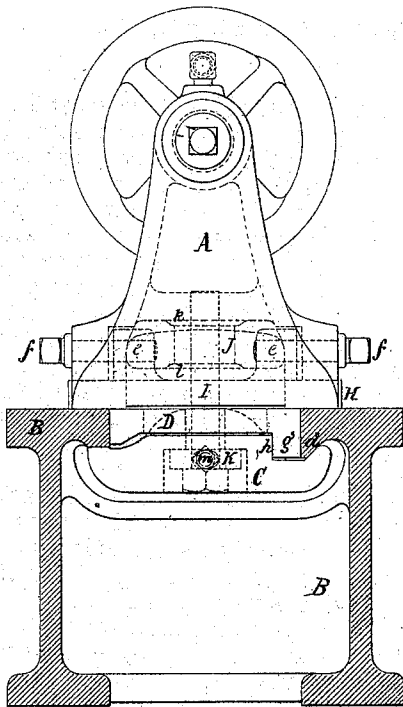
WILLIAM SELLERS.

Improvement in Metal-Turning Lathes.

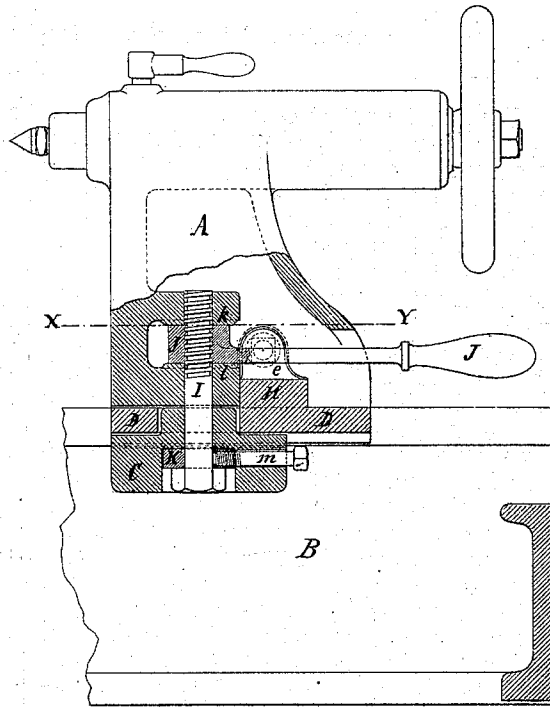
No. 127,195.

Patented May 28, 1872.

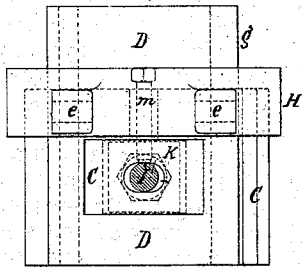
— Fig. 2. —



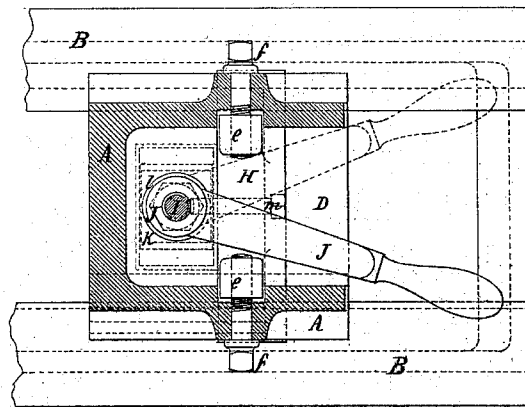
— Fig. 1. —



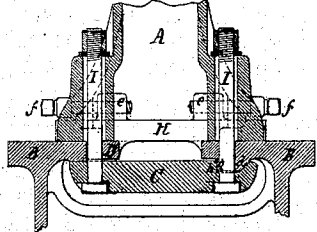
— Fig. 4. —



— Fig. 3. —



— Fig. 5. —



Joel Peyton
Baltus D. Long } Witnesses.

Inventor:
Wm. Sellers
by his atty
W. D. Baldwin

UNITED STATES PATENT OFFICE.

WILLIAM SELLERS, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN METAL-TURNING LATHES.

Specification forming part of Letters Patent No. 127,195, dated May 28, 1872.

To all whom it may concern:

Be it known that I, WILLIAM SELLERS, of the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Turning-Lathes, of which the following is a specification:

Letters Patent of the United States were granted to me December 28, 1869, No. 98,423, for an improved lathe, in which the bearing surfaces of the adjustable head and its clamping piece are so arranged that the clamping pressure, in addition to holding the head down securely on the surface of the shear or bed, draws it over sidewise against the inner vertical edge of one side of the shear. This device obviated the defects of the theretofore ordinary construction of flat-top shears, in which the line of the centers and the accuracy of the work depended on the lateral fit of the movable head between the two sides of the shear, and in which imperfect fitting or the gradual wear of these surfaces would permit lateral play of the head within its guiding surfaces, destroy the absolute parallelism of the centers, and increase—in proportion to the inefficiency of the guiding surfaces—their liability to produce inaccurate work.

Now, the object of my present invention, which relates to my improved lathe above mentioned is to combine with my previous provisions against these defects an independent lateral adjustment of the movable head, so that the centers of the lathe may be set for work of any definite amount of taper within the range of the lateral adjustment or to provide for the wear of the turning-tool or the springing of the work. To obtain this independent lateral adjustment, instead of projecting the head downward between the shears, as described in my first patent just referred to, I interpose between the head and its clamping-piece a plate separate from the head that affords a lateral guiding surface flush with the top of the shear, and a clamping surface, the edge of which bears against the adjacent vertical edge of that side of the shear having the beveled projection and toward which side the plate is drawn by the beveled surface of the clamping-piece. On the upper surface of this intermediate plate is cast or otherwise secured a transverse bar which extends above the top surface of the shear, and the ends of which project beyond the plate and

rest upon the two sides of the shear flush with the bottom of the head. The head itself, which also rests upon the surface of the shear, is cut out to receive the ends of the transverse bar, the sides of which are so accurately fitted to the corresponding surfaces in the head as to prevent play, yet, at the same time, allowing the head to be adjusted laterally along this bar. The transverse bar has two lugs projecting upward in the space between the sides of the head, which act as nuts for two adjusting-screws passing through the respective sides of the head and into the respective lugs, thus serving to adjust the head laterally upon the intermediate plate.

The very efficient mechanism for actuating the clamp to secure the head in any required position, or instantly disengage it from its hold on the shear, which formed a prominent feature of my previously-patented lathe, is easily adapted to the present improvement. In the former instance the clamping-screw was made adjustable in the clamp itself, so that a limited amount of movement of a clamping-lever within the same space should always suffice to tighten or loosen the clamp. Instead, however, of confining the clamping-screw laterally to a fixed position in the clamp, I have herein made it adjustable within a washer, which is let into the clamp and bears upward against it, but is free to move laterally with the side adjustment of the head upon the plate.

In the accompanying drawing, Figure 1 is a sectional side elevation of the movable head of a lathe embodying my present improvements. Fig. 2 is an end view of the same; Fig. 3, a sectional plan through the line *xy* of Fig. 1. Fig. 4 is a detached top view of the intermediate plate and clamping-piece; and Fig. 5 shows an adaptation of two holding-down bolts to my present combination of the lateral adjustment with the improved clamping and guiding surfaces.

The movable head A carries the dead-spindle of the lathe, fitted with the usual devices for moving it lengthwise and for securing the spindle in any required position. This head A rests upon the shear or bed-plate B, which straddles and is retained in position by the transverse clamping-piece C and clamping-screw I. The head is adjusted laterally by means of the intermediate plate D, which is interposed between

the head and the clamping-piece and along the shear between its sides. The transverse bar H, which forms part of the plate D, slightly exceeds in length the width of the head A, so that at any point of its adjustment the bar retains a full bearing on both sides of the head. This bar is fitted into the head A, as already described, and has lugs *e* projecting upward on the inside of the head, into which lugs set-screws *f f* pass, and by means of these screws the head is adjusted laterally along the bar H and secured in its adjusted position, (see Fig. 2.) While one side of the shear is flat underneath, and the corresponding surface of the clamping-piece C is also plane, the clamping-piece has, at its other side, a beveled projection, which fits into a corresponding beveled recess underneath the corresponding side of the shear. A longitudinal gain or recess in the clamping-plate on this beveled side receives a projection or stud, *g*, depending from the interposed plate D, which projection bears on one side against the face or edge of the beveled recess in the shear, and on the other side against the shoulder *h* of the gain or recess in the clamping-plate. It is obvious that the beveled surfaces of the clamping-piece and of the shear will not only draw the clamp and the plate D over toward their side, but that on tightening the clamp the projection *g* on the plate D will be so firmly locked between the shoulder *h* on the clamp and the face or edge of the beveled recess on the shear as to effectually prevent any sidewise yielding of the plate under the strain of the cut. The clamping-screw I is actuated by a hand-lever, J, the hub of which acts as a nut to the coarse screw-thread, and is vertically confined between surfaces *k* and *l* in the head, so that a vibration of this lever around the axis of the stationary screw I will impart a positive motion to the screw in the direction of its axis, and thus either raise the clamp to secure the head, or, by a motion in the opposite direction, free the latter from its hold on the shear, so that the head may be moved endwise along the shear. A square washer, K, is

placed between the head of the clamping-screw I and the lower bearing surface of the clamp C. This washer is prevented from turning by the sides of the oblong recess in which it is confined. A set-screw, *m*, provides the means of so adjusting and fixing the position of the screw I around its axis in the nut K as always to let the described effects of the motion of the lever be had within the same limits of vibration. The clamping-screw I, washer K, and set-screw *m* have each sufficient lateral play in the clamp to permit the described transverse adjustment along the bar H of the head A, in which the screw I is suspended. In heads of large dimensions the modification of the clamping mechanism shown in Fig. 5 takes the place of the single clamping-screw I. This modification consists in the use of two holding-down bolts, I I, which are kept as far apart as the opening in the top of the shear will admit. In this case the bolts are held rigidly in the clamp and intermediate plate, the holes in the head being made sufficiently oblong to allow the transverse adjustment of the head, which in all other respects corresponds with the above description.

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

1. The combination of the laterally-adjustable head A, the clamp C, the intermediate plate D with its bar H and downward projection *g*, the beveled projection *d* on the shear, the clamping-screw I, and the set-screws *f f*, these parts being constructed to operate in combination, as hereinbefore set forth.

2. The combination, with the laterally-adjustable head A, the clamping-screw I, recessed clamping-plate C, washer K, and set-screw *m*, so as to permit the adjustment of the head, substantially as hereinbefore set forth.

In testimony whereof I have hereunto subscribed my name.

WM. SELLERS.

Witnesses:

CYRUS BORGNER,
H. A. FULTON.