W. Sellers.

Lathe.

No. 98,423. Patented Dec. 28, 1869.

Fig: 2.

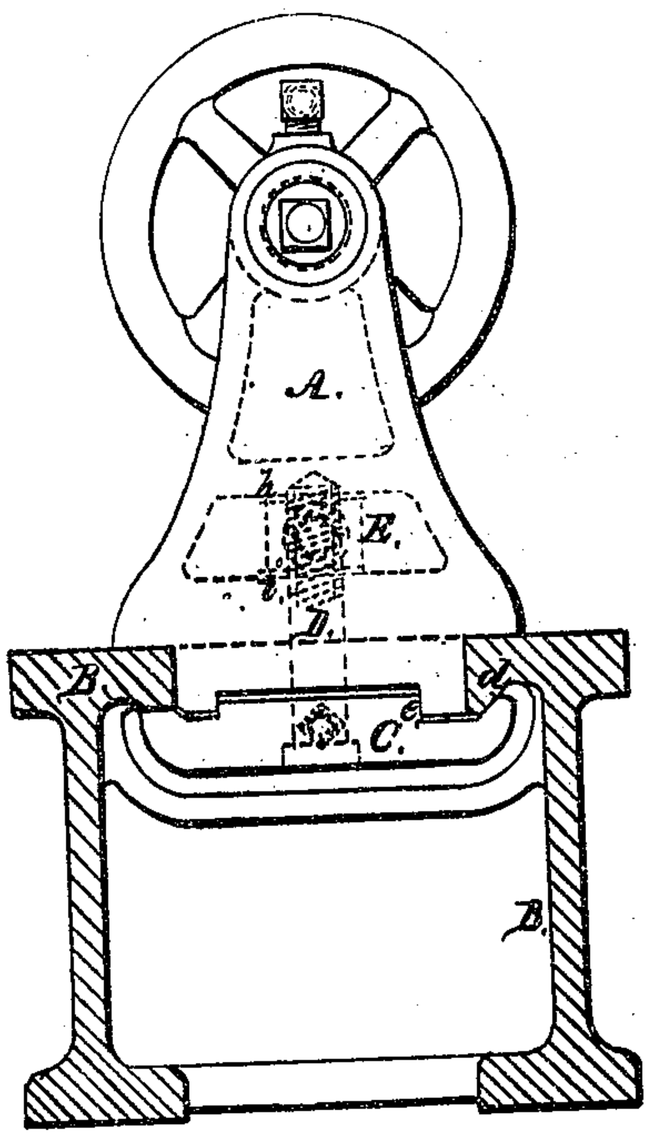


Fig: 1.

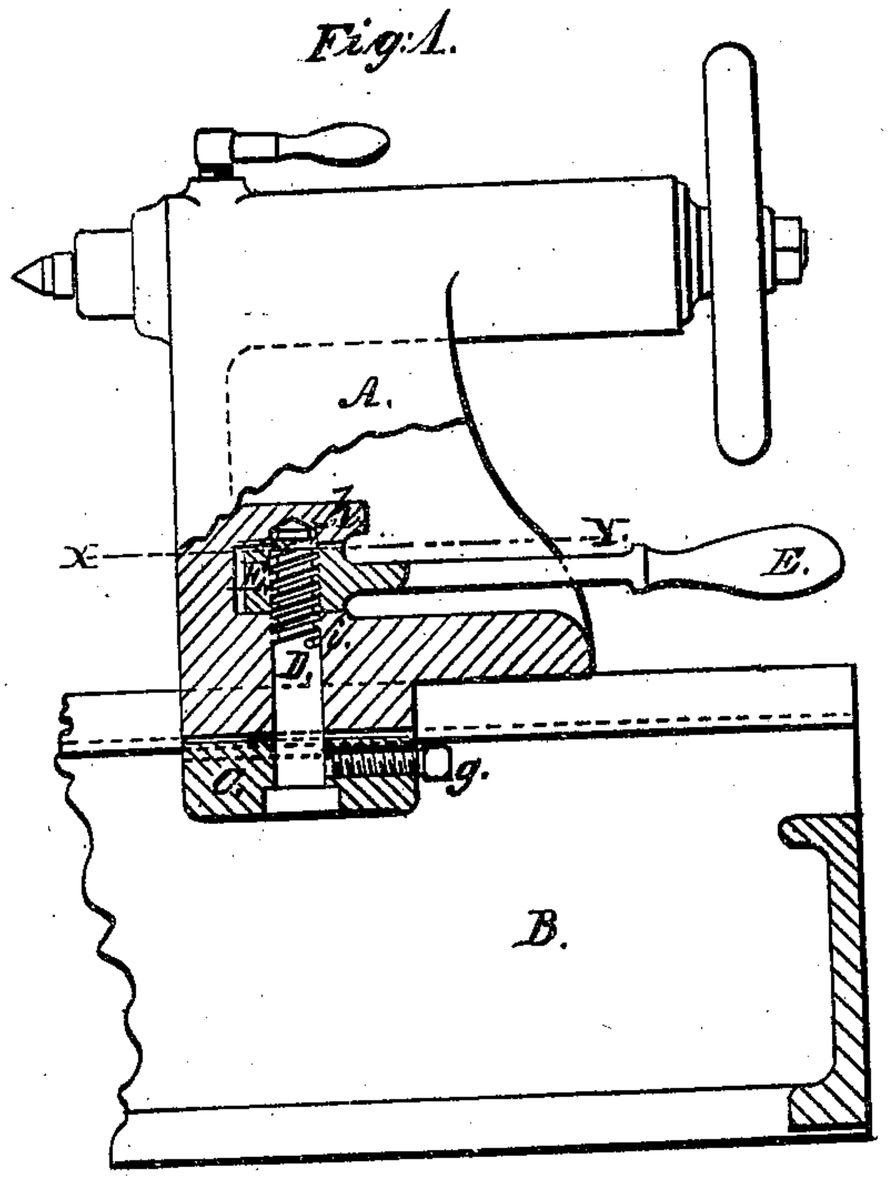


Fig: 4.

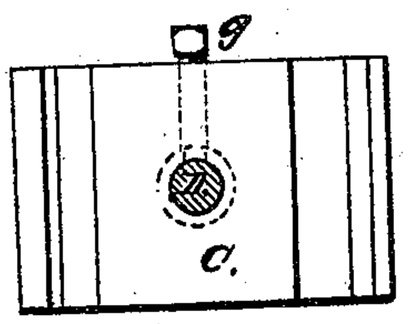
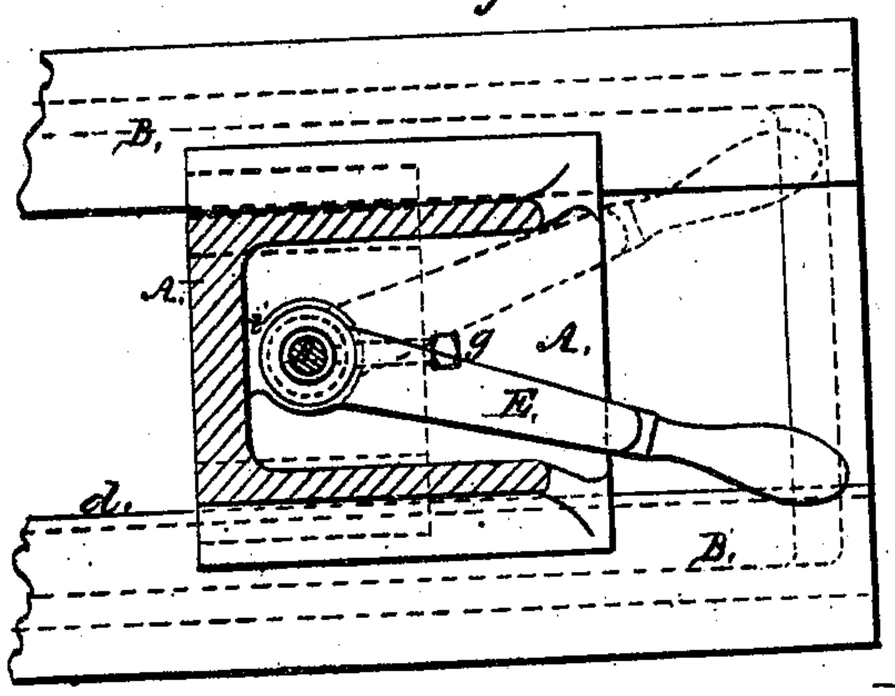


Fig: 3.



Witnesses:

Theodore Bergner

Colen and Sellers

Inventor:

Wm Sellers

UNITED STATES PATENT OFFICE.

WILLIAM SELLERS, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN LATHES.

Specification forming part of Letters Patent No. **98,423**, dated December 28, 1869.

To all whom it may concern:

Be it known that I, WILLIAM SELLERS, of the city of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Turning-Lathes; and I do hereby declare the following to be a full and exact description of the same, reference being had to the acccompanying drawings, and to the figures and letters of reference marked thereon.

My invention relates to the class of lathes in which the tool slide or saddle rests upon flat top surfaces of the shear, and is held down and guided in its sliding movements by gibs under the beveled edges of the shear. The adjustable heads of such lathes, as ordinarily constructed, are so guided within the sides of the shear as to make the relative accuracy of the centers of the lathe dependent upon the perfect fitting of the adjustable head within these guiding-surfaces; and if, owing to imperfect fitting in the first place or from gradual wear of these surfaces, any lateral play of the head is permitted within its guiding-surfaces, then the absolute parallelism of the centers is destroyed, and their liability to produce inaccurate work increases in proportion to the inefficiency of the guiding-surfaces.

Now, the object of my invention is mainly to provide against these heretofore-existing defects by so arranging the wearing and guiding surfaces of the adjustable head and shear that the line of the centers and accuracy of the work shall not be dependent on the lateral fit of the movable head between the two sides of the shear, but be governed by the contact of surfaces, relatively so disposed that any ordinary wear due to continued use shall not impair the true parallelism of the centers.

To this end I provide along the bottom of the inner side of one of the flat top surfaces of the shear an outwardly-beveled projection, and I so arrange the bearing-surfaces of the clamping-piece which holds down the adjustable head that the clamping-pressure is partly brought up against the beveled side of the aforesaid projection on the shear, whereby the head, in addition to being securely held down to its place on the surface of the shear, is drawn over sidewise in the direction of the beveled surface and against the inner vertical edge of that side of the shear. On the other side the head is only held down securely to the shear by the clamp, without any laterally-fitting surface; and it will thus be seen that by this arrangement the defects arising from the ordinary manner of fitting the head between the two sides of the shear are avoided.

Another feature of importance in my invention consists in a novel and very efficient construction of the mechanism for actuating the said clamp, whereby the movable head may either be securely held down in any required position or instantly disengaged from its hold on the shear by simply moving a conveniently-placed handle in the required direction, and without the use of a separate wrench, the clamping-screw being so adjustable that a limited amount of movement of the lever within the same space may always suffice to tighten or loosen the clamp.

In order that my said invention may be fully understood, I will now proceed more particularly to describe the construction and operation of the same.

On reference to the drawing forming part of this specification, and in which similar letters of reference allude to like parts in the several views, Figure 1 is a sectional side elevation of the parts of the lathe containing my improvements. Fig. 2 is an end view; Fig. 3, a sectional plan through the line X Y, Fig. 1; and Fig. 4 is a detached top view of the clamping-piece.

A is the adjustable head, which carries the dead spindle of the lathe, and is fitted with the usual devices for moving this spindle in the direction of its axis, and also for securely holding the spindle in any required position.

B is the shear of the lathe, and C the transverse clamping-piece for securing the head A to the shear, the shape of the beveled projection *d* on the one side of the shear, and the manner in which the conformingly-beveled surface of the clamp C tends to draw the head over against that side of the shear, are best understood on reference to Fig. 2 of the drawing.

It will be seen that by tightening the clamp the head becomes so firmly locked between the surface *e* of the clamp and the projection *d* on the shear that it cannot possibly yield

sidewise under the strain of the cut. By placing the beveled projection *d* on the front side of the shear, as shown in the annexed drawings, this improved method of clamping the head to the shear will be found to present a marked advantage over the old construction of lathes, in which the adjustable head rests in a beveled projection on the top surface of the shear, for while in those lathes the strain of the cut is parallel to the surface upon which it is clamped, the beveled surface in my improvement is perpendicular to this strain.

Into a shallow recess in the bottom of the head A the clamp C is tongued to a sufficient depth to always keep it in proper position relative to the head and shear; and this clamp is fitted with an upwardly-extending clamping-screw, D, which has a coarse square thread of steep pitch, and is held from turning by a set-screw, *g*, in the clamp C.

The hub of a hand-lever, E, acts as a nut to the clamping-screw C, and this nut is vertically confined between surfaces *h* and *i* in the head, so that a vibration of the lever E around the axis of the screw D will impart a positive motion to the screw in the direction of its axis. Thus the vibration of the lever in one direction will raise the clamp and bring it in contact with corresponding surfaces on the shear to secure the head, while a motion of the lever in the opposite direction will cause a downward motion of the screw and clamp, thereby freeing the latter from its hold on the shear, so that the head A becomes free to be moved endwise along the shear.

From Fig. 3 it will be seen that the lever E has only a limited movement between the two sides of the head A; but with the coarse pitch of the clamping-screw this amount of vibration is quite sufficient to produce the required opposite effects on the clamp C, and the set-screw *g* provides the means of so adjusting and fixing the position of the screw D around its axis as to always let these effects of the motion of the lever be had within the same limits of vibration.

It will be evident that this improved arrangement of clamping-screw and nut may be adapted to any of the ordinary clamps in present use, and I therefore do not limit its application to the particular form of clamp herein described.

Having thus described the nature and object of my improvements, what I claim as my invention, and desire to secure by Letters Patent, is—

1. The beveled projection *d*, or its equivalent, when used in combination with the clamp C, substantially as and for the purpose specified.

2. The screw D and nut E, in combination with the set-screw *g*, or its equivalent, for the purpose specified.

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Witnesses:
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