(No Model.)

J. K. SEVERSON.

ADJUSTABLE TOOL HOLDER.

No. 600,747. Patented Mar. 15, 1898.

Fig. 1.

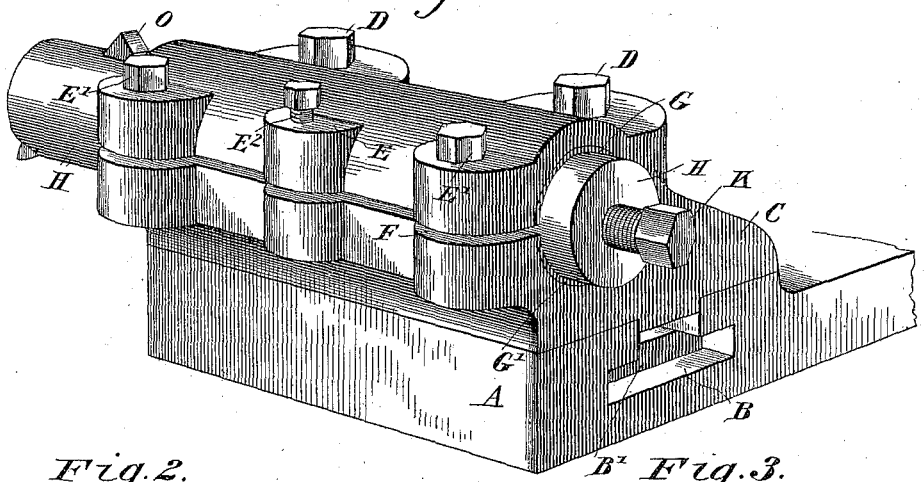


Fig. 2.

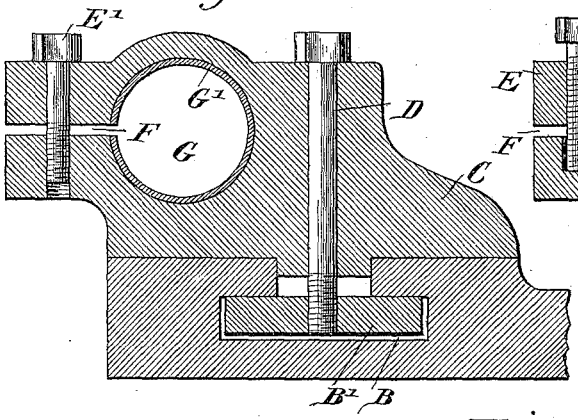


Fig. 3.

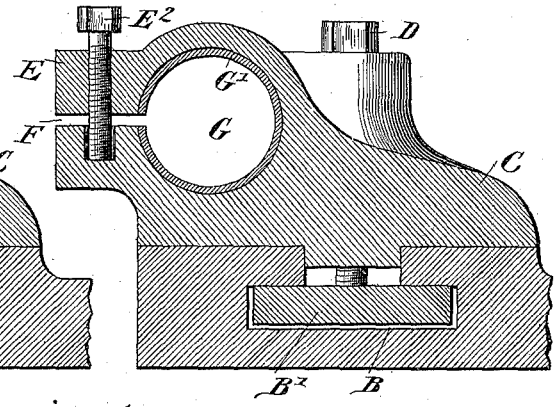


Fig. 4.

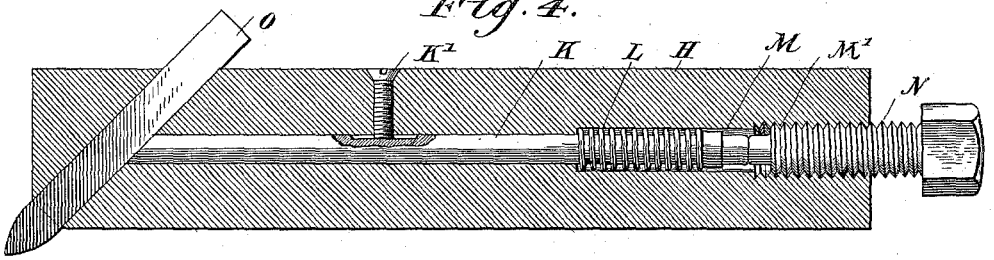


Fig. 5.

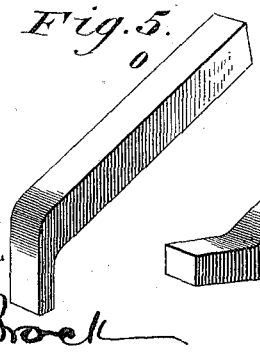


Fig. 6.

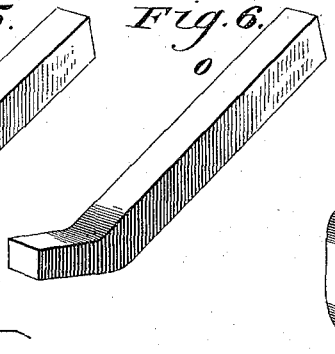
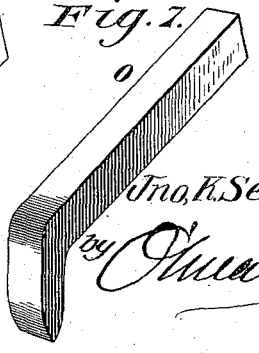


Fig. 7.



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UNITED STATES PATENT OFFICE.

JOHN K. SEVERSON, OF MADISON, WISCONSIN.

ADJUSTABLE TOOL-HOLDER.

SPECIFICATION forming part of Letters Patent No. 600,747, dated March 15, 1898.

Application filed August 20, 1897. Serial No. 648,927. (No model.)

To all whom it may concern:

Be it known that I, JOHN K. SEVERSON, residing at Madison, in the county of Dane and State of Wisconsin, have invented a new and useful Adjustable Tool-Holder, of which the following is a specification.

This invention relates to improvements in tool-holding devices, and more especially for holding such tools as are commonly employed in connection with turning or boring lathes.

The object of my invention is to provide means whereby such tools may be held rigidly within an adjusting block or holder from which the tool may be readily removed for the purpose of sharpening or for the insertion of a different tool.

My improved device is exceedingly simple and durable and is a substantial improvement over the holders ordinarily employed for the same purpose.

In the drawings herewith, in which like parts are indicated by similar letters of reference, Figure 1 is a perspective view of my improved adjustable tool-holder. Fig. 2 is a cross-sectional view intersecting the apertures for the end bolts D and E'. Fig. 3 is a central cross-section intersecting the aperture for bolt E. Fig. 4 is a longitudinal section of the tool-holder. Figs. 5, 6, and 7 are perspective views of differently-formed tools adapted to be carried by the holder shown in Fig. 4.

In the construction of my improved tool-holder there is provided the base-block A, having centrally therein the slideway or dovetail recess B, in which is confined the sliding plate B'. The cap or upper portion C of the block is secured to the sliding plate B' by bolts D, having their lower ends screw-threaded and adapted to engage with screw-threaded apertures in said plate B'. The said cap C is secured rigidly upon the base A by the rotation of said bolts D, which will cause the sliding plate B' to bind against the shoulders of the slideway B.

Within the upper portion of the cap C, I provide a longitudinal opening G, preferably circular, and leading into said opening from the lateral surface of the block I provide a slot F. Within said opening G, I provide a resilient bushing G'. By reason of said slot F the said opening G is normally expanded, and its contraction may be effected by means of the screw-bolts E'. The central bolt E is provided for the purpose of expansion, its lower end being projected into a smooth socket in the lower portion of the block C. It will be seen that the outer bolts E are screw-threaded at their lower ends, while the middle bolt is screw-threaded throughout, engaging with a screw-threaded aperture in the central lug E. I next provide the tool-holder H, which is such size and shape in cross-section as to fit within the aperture G and bushing G' when they are in an expanded condition. Within said portion H, I provide a central longitudinal aperture adapted to receive a plunger K, said plunger being retained and limited in its action by means of a set-screw K' passing through said holder into the central aperture, the end projecting into a shallow channel in the surface of the plunger. The end M of the plunger-aperture is enlarged and provided with a spiral spring L, so arranged as to impel said plunger outwardly. The extreme outer end of the aperture is formed as a screw-threaded-bolt aperture M' and provided with a suitable bolt N, by means of which the plunger K is projected forwardly within the holder H.

Adjacent to the end of the holder H, I provide centrally therethrough a tool-aperture for the reception of a cutting or boring tool O. Said aperture is inclined forwardly, and the plunger-aperture opens thereinto, as shown. The adjacent end of the plunger K is cut in the same inclined plane as the tool-recess, so that the plunger may have full bearing upon the shank of the tool. The tool-aperture is usually square in cross-section.

The operation of my improved tool-holder is as follows: The tool-holder H is first placed within the expanded bushing G' of the opening G and secured therein by rotation of the screw-bolts E', the bolt E^2 having previously been rotated upwardly. The tool O is then inserted in the holder H and confined therein by the plunger K, said plunger being forwardly impelled by means of the screw-bolt N being rotated inwardly against the end of said plunger.

By means of the construction as above described I provide a block adjustment and a

tool adjustment, each independent of the other. In practice the approximate adjustment is effected by the block, and the projection of the tool is effected by the holder adjustment. The exact and final adjustment is by means of the position of the tool O in the holder H.

Having thus described my invention, what I claim as new, and desire to secure by means of Letters Patent, is—

1. The combination in a holder for cutting or boring tools, of a base-block, a sliding block secured thereon, a clamping-recess in said sliding block, screw-bolts for contracting and another bolt for expanding said clamping-recess, a tool-holder adapted to be secured within said recess, a plunger secured centrally of said holder, an inclined recess in said holder adapted to receive the tool-shank, a spring for outwardly impelling said plunger, a screw-plug for impelling the plunger inwardly, the contact of the inner plunger end adapted to clamp the tool-shank within the holder, the whole constructed, arranged and adapted for operation, substantially as and for the purpose herein set forth and shown.

2. In a tool-holder, the combination with a supporting-base, of a sliding block, a clamping-recess in said sliding block, screw-threaded bolts for expanding and contracting said recess, a resilient bushing within said recess, a tool holder or clamp having a longitudinal recess opening into an inclined transverse recess, a rearwardly-spring-impelled plunger in the first-mentioned recess, a screw-plug adapted by rotation to force said plunger inwardly, a cutting or boring tool having a shank adapted to enter said inclined recess and to be secured therein by the pressure of the plunger end against said shank, all substantially as herein shown and set forth.

3. The combination with a turning or boring lathe of a tool-holder therefor, consisting of a supporting-block, a sliding block mounted thereon, clamping-bolts projected through said sliding and base portions, a clamping-recess in said sliding block, bolts for contracting and expanding said clamping portion, a tool-holder adapted for insertion into said clamping-recess, an outwardly-spring-impelled plunger in said holder, a screw-threaded plug for projecting said plunger inwardly, a tool-bearing shank with an inclined aperture therefor adjacent to the end of said holder, said shank adapted to be clamped by the projected end of said plunger, all substantially as herein shown and described.

JOHN K. SEVERSON.

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