





(No Model.)

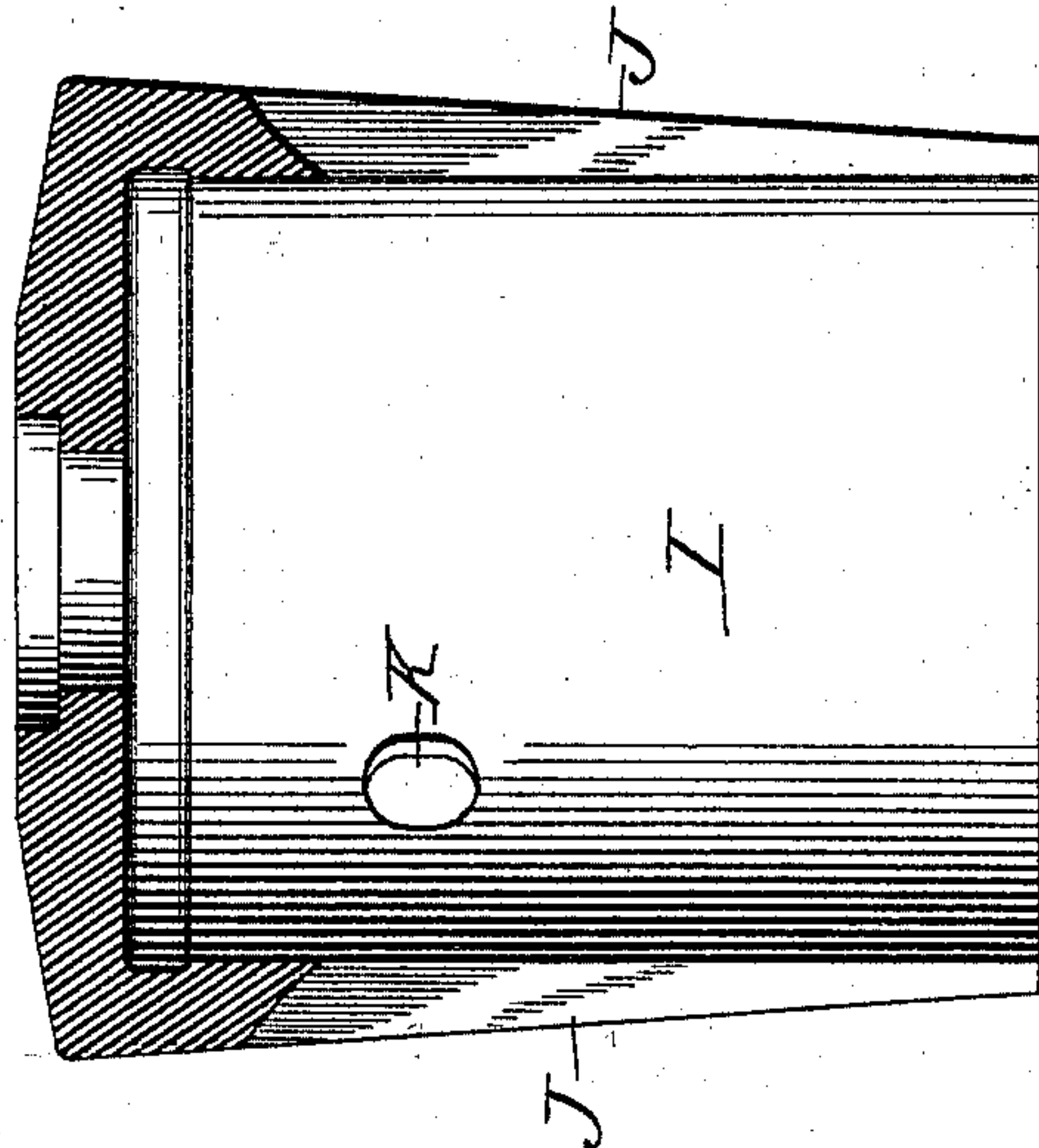
2 Sheets—Sheet 2.

H. S. JOHNSON.  
TOOL HOLDER.

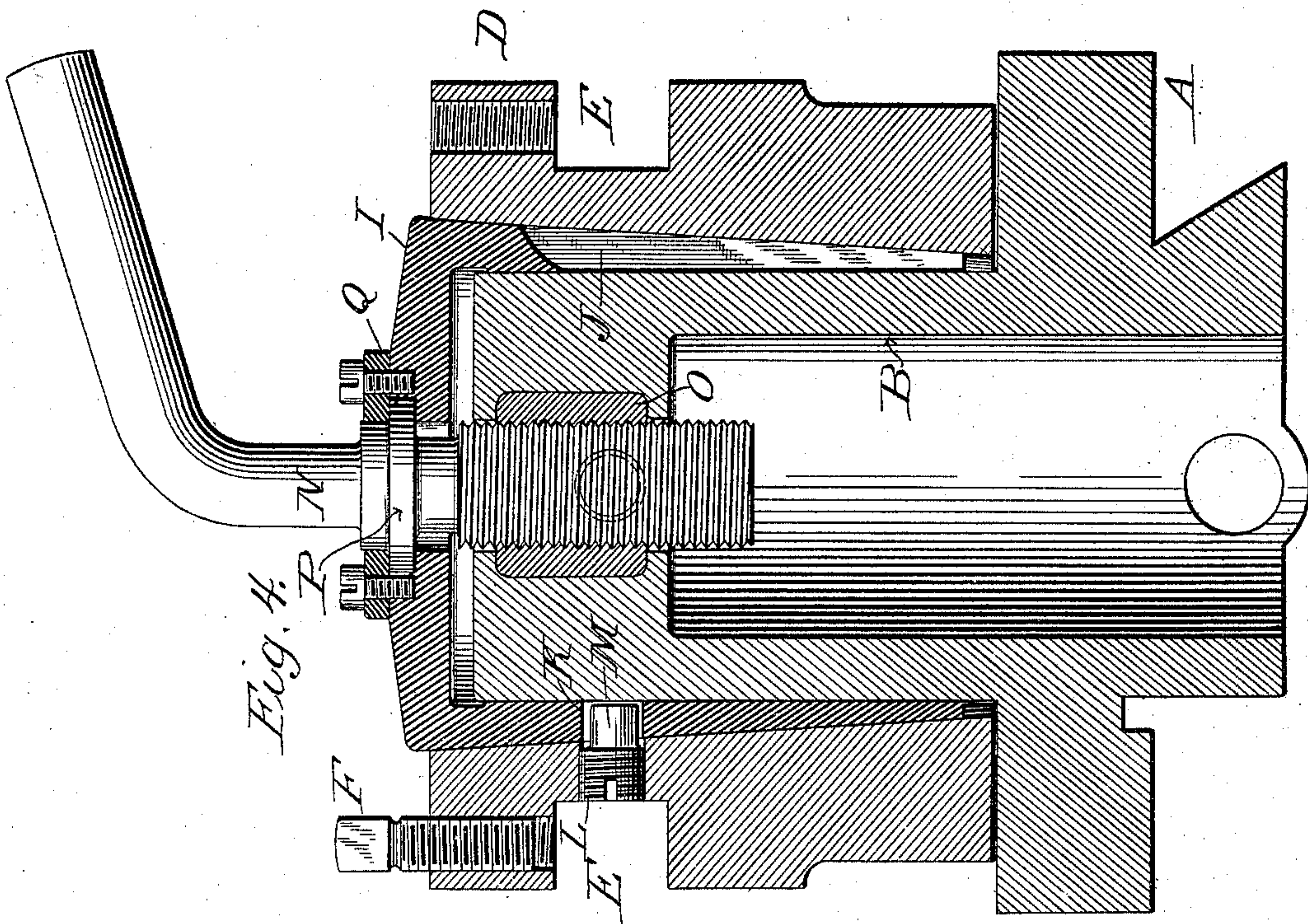
No. 604,009.

Patented May 10, 1898.

*Fig. 5.*



*Fig. 4.*



Witnesses  
W. B. Burdine  
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# UNITED STATES PATENT OFFICE,

HOBART S. JOHNSON, OF MADISON, WISCONSIN.

## TOOL-HOLDER.

SPECIFICATION forming part of Letters Patent No. 604,009, dated May 10, 1898.

Application filed November 22, 1897. Serial No. 659,473. (No model.)

*To all whom it may concern:*

Be it known that I, HOBART S. JOHNSON, a citizen of the United States, residing at Madison, in the county of Dane and State of Wisconsin, have invented certain new and useful Improvements in Tool-Holders, of which the following is a specification.

My present invention pertains to improvements in tool-holders, the construction and advantages of which will be hereinafter set forth, reference being had to the annexed drawings, wherein—

Figure 1 is a perspective view of the holder, the parts being separated and the central post, rising from the base-plate or cross-slide, being broken away; Fig. 2, a top plan view; Fig. 3, a vertical sectional view on the line 1 1 of Fig. 2; Fig. 4, a similar view on the line 2 2, and Fig. 5 a detail sectional view of the clamping shell or cone.

The object of my invention is to provide a simple and highly-efficient tool-post of the turret type, one which may be readily manipulated to bring the various tools into operative position with the work and to hold them steady in such adjusted position without any chattering or vibration of the parts.

Referring to the drawings, A denotes a cross-slide or base, which may be made of any desired form or type, and B a cylindrical post or standard extending upwardly therefrom. The cross-slide is also formed with a stud or block C to one side of the post and at a distance (more or less) therefrom.

D indicates the tool-carrier, provided with tool-seats E and suitable clamping-screws F, as is usual in this class of tool-holders. Said carrier is formed with a tapering opening, which extends therethrough, the opening being largest at the top of the shell and gradually decreasing in diameter as it nears the bottom.

Around the bottom or base of the carrier there is formed a series of pockets or recesses G, of such dimensions and form as to receive the stud or block C when the tool-carrier is lowered into working position. Immediately over each of said recesses or pockets there is formed an opening which extends up through to the top of the block, the upper portion being threaded and designed to receive a bolt H. Said bolt is of such length that its lower

end may be protruded into the recess or pocket to any desired degree and will of course determine the elevation of the tool-carrier with reference to the cross-slide or base-plate.

I indicates the clamping cone or shell, the interior diameter being such that it fits loosely upon the central post B when the parts are not clamped. The outer face of the cone or shell gradually tapers from the top to the bottom, the angle upon which it is formed being the complement of that upon which the inner face of the tool-carrier is made, so that said parts have a direct bearing throughout substantially their entire surface when the parts are in their clamped position, as denoted in Fig. 4. It will be seen upon reference to this figure that the shell or cone is of such length that it does not quite touch the cross-slide A.

As shown in Figs. 1, 3, and 5, the clamping shell or cone I is provided or formed with a series of slots J, extending from the bottom up toward the top, said slots permitting a certain amount of give or yield to the intermediate sections formed thereby.

A recess or opening K is formed in one side of the cone, and a screw L, provided with a reduced end M, is mounted in the tool-carrier D, the reduced end M passing into the opening K, (of larger diameter,) as shown in Fig. 4. It will thus be seen that said parts are held together, but may have a slight relative movement one to the other.

N indicates the main screw for elevating and lowering the tool-carrier and cone and locking said parts together. Said screw works in a nut O, formed in the head of the post B, and is also provided with a collar or flange P, which is seated in a recess formed in the top of the cone, a clamping-ring Q being used to form the upper bearing for said collar.

The operation of the holder is as follows, assuming, of course, that the necessary tools have been secured within the seats E and that the tool-carrier is in its elevated position: The carrier D is rotated until the desired tool has been brought into proper relation to the work, at which time one of the recesses or pockets G will be directly over the stud or block C. The operator then turns the main screw N, so that the tool-carrier and the clamping cone or shell I are lowered, both parts moving down together, the reduced end M of



the screw L bearing against the lower end of the opening K. The screw N is rotated until the lower end of screw H comes into contact with the stud or block C, said screw having  
 5 been or being adjusted to regulate and secure the proper elevation of the tool. This of course brings the tool-shell D to a stop, and a further rotation of the main screw N will carry or force the split cone or shell I down-  
 10 ward, causing it to wedge itself in between the tool-carrier D and the central post or standard B, securely clamping or binding all the parts together and preventing all movement or chattering of the tool. Of necessity  
 15 the entrance of the stud or block C into the recess or pocket G will prevent any turning of the shell. When it is desired to bring another tool into place, all that is necessary is to elevate screw N, which will first withdraw  
 20 the cone I, releasing the parts, and then carry said cone and the carrier D up until the stud or block C is clear of the recess or pocket. The tool-carrier may then be turned to the desired position independent of any move-  
 25 ment of the screw N.

It is of course manifest that a tool-carrier of a form other than that set forth may be employed so long as the internal bore be such that it will act in conjunction with the cone I.

30 Having thus described my invention, what I claim is—

1. In a tool-holder, the combination of a cross-slide or base; a post extending up there-  
 35 from; a shell mounted upon said post and provided with an outer tapering face; a tool-carrier provided with an internal tapering bore surrounding said shell; a connection between said shell and tool-carrier; and a screw for raising and lowering the taper-shell.

40 2. In a tool-holder, the combination of a cross-slide or base; a post extending up there- from; a shell mounted upon said post and provided with an outer tapering face; a tool-carrier provided with an internal tapering bore  
 45 surrounding said shell; a connection between said shell and tool-carrier; a screw for raising and lowering the taper-shell; and means for determining the descent of the tool-carrier.

50 3. In a tool-holder, the combination of a cross-slide or base; a post extending up there- from; a shell mounted upon said post and pro-

vided with an outer tapering face; a tool-carrier provided with an internal tapering bore surrounding said shell; a connection between said shell and tool-carrier; recesses formed in  
 55 the base of the carrier; a post extending up from the base in line with said recesses; adjusting-screws passing through the tool-carrier into said recesses; and a screw working in the post connected to the shell and designed  
 60 to elevate and lower the parts.

4. In a tool-holder, the combination of a cross-slide or base; a post extending up there-  
 65 from; a shell mounted upon said post and provided with an outer tapering face and slots J in its side; a tool-carrier provided with an internal tapering bore surrounding said shell and with recesses or pockets G and adjusting-  
 70 screws H; a connection between said shell and tool-carrier; a block extending up from the base in line with the recesses in the tool-carrier; and a screw working in the upper end of the post and connected to the shell.

5. In a tool-holder, the combination of a cross-slide or base; a post extending up there-  
 75 from; a shell mounted upon said post provided with an outer tapering face and slots J in its side; a tool-carrier provided with an internal tapering bore surrounding said shell, and with  
 80 recesses or pockets G in its base; adjusting-screws extending through the carrier into said recesses; a block extending up from the base in line with said recesses; a screw L se-  
 85 cured in the tool-carrier and extending into an opening K in the shell; and a screw working in a nut carried in the upper end of the post, said screw being connected to the shell, substantially as described.

6. In a tool-holder, the combination of a cross-slide or base; a post extending upwardly  
 90 therefrom; a tool-carrier; a wedge-shaped shell intermediate said carrier and post; means for raising and lowering the carrier and shell; and means for preventing the parts  
 95 from rotating about the post when in their lowered and clamped position.

In witness whereof I hereunto set my hand in the presence of two witnesses.

HOBART S. JOHNSON.

Witnesses:

W. R. BAGLEY,  
 EDWARD F. APPLEBY.