No. 810,307. PATENTED JAN. 16, 1906.

P. H. ROBINSON.

TOOL HOLDER.

APPLICATION FILED MAY 29, 1905.

Fig. 1.

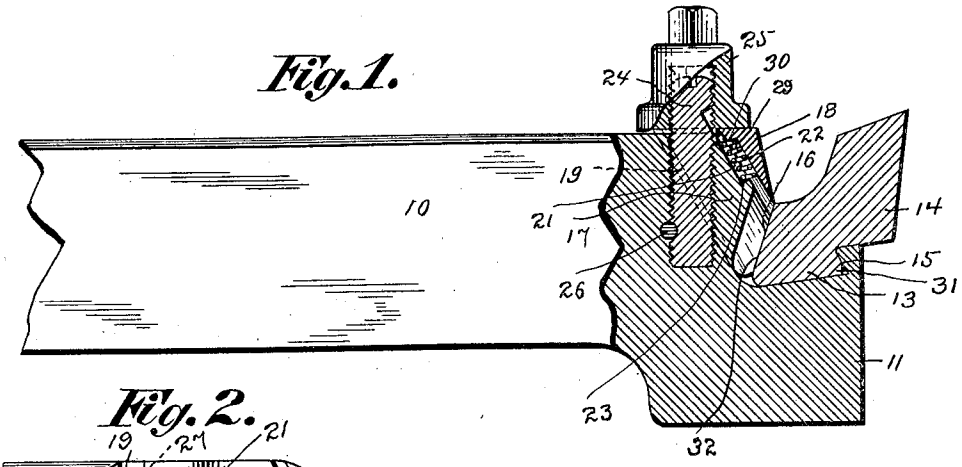


Fig. 2.

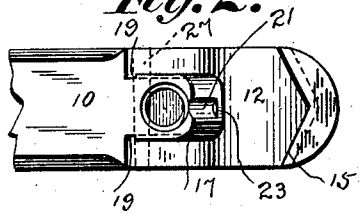


Fig. 5.

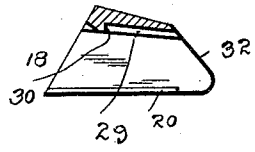


Fig. 4.

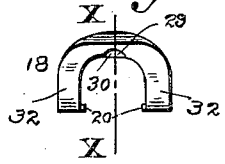
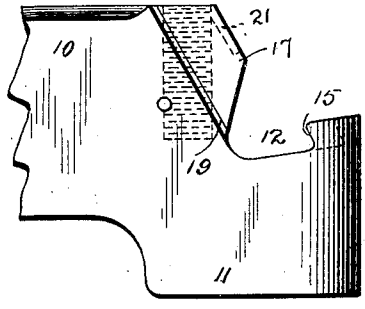


Fig. 3.



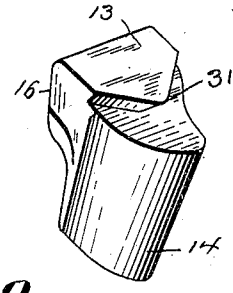


Fig. 6.

Fig. 7.

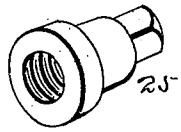
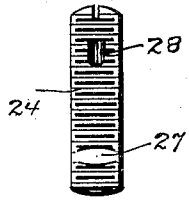


Fig. 8.



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TOOL-HOLDER.

No. 810,307. Specification of Letters Patent. Patented Jan. 16, 1906.

Application filed May 29, 1905. Serial No. 262,744.

To all whom it may concern:

Be it known that I, PEARL H. ROBINSON, a citizen of the United States, residing at Shelton, county of Fairfield, State of Connecticut, have invented a new and useful Tool-Holder, of which the following is a specification.

This invention relates to the class of tool-holders that are adapted for general use upon lathes, planing-machines, shaping-machines, &c., and has for its object to provide a holder that will dispense with shanks upon the tools, thus effecting an important saving in stock and also avoiding the weakening of the holder by making a hole through it to receive the shank, which shall be quick-acting, in which the tool shall be self-centering, in which the tool shall be locked so that it cannot rise up or move forward, backward, or sidewise, which while relatively light shall be very strong and will block the strain in any direction by solid metal too strong to break under the ordinary or even extraordinary conditions of use, in which the slide shall be held against forward movement, and in which the downward and sidewise strain, which is the greatest strain of ordinary use, shall be taken up by the diagonal diameter of the base.

With these and other objects in view my invention consists in the construction and combination of parts hereinafter described and then specifically pointed out in the claims hereunto appended.

Figure 1 is a vertical sectional elevation illustrating the construction and operation of my novel tool-holder and showing a tool in the locked position; Fig. 2, a plan view with the tool, slide, springs, and threaded post removed; Fig. 3, a side elevation corresponding with Fig. 2; Fig. 4, a plan view of the slide removed; Fig. 5, a section of the slide on the line X X in Fig. 4; Fig. 6, a perspective of a tool inverted; Fig. 7, a perspective of the locking-nut detached, and Fig. 8 is an elevation of the threaded post detached.

10 denotes the body of my novel tool-holder, and 11 the head thereof, in which the tools are socketed. The head is provided with a transverse recess 12, which receives the base 13 of a tool 14. The design and character of the tool is wholly unimportant so far as the present invention is concerned. The bases of the tools are made to correspond with the recess to receive them. The bottom of the recess preferably inclines downward and backward slightly and is provided at its forward end with an undercut angular abutment 15, against which the correspondingly-shaped forward end 31 of the base of the tool bears. The forward end of the tool-base is shown as a projecting obtuse angle and is inclined downward and forward to correspond with the abutment, which is in form an inwardly-inclined obtuse angle. The back of the base of the tool is a downwardly and rearwardly inclined wall 16. Back of the transverse recess in the head and formed integral with the forward end of the body is an inclined carrier 17, which carries a locking-slide 18, which is substantially U-shaped in cross-section. At the base of the carrier are grooves 19, which receive inwardly-extending ribs 20 at the base of the slide and retain the latter securely in place on the carrier. The forward end of the carrier is a downwardly and inwardly inclined wall 32, which corresponds with wall 16 on the tool. The outer face of the carrier is provided with a recess 21, which receives a spring 22, said spring resting upon a shoulder 23 at the bottom of the recess. 24 denotes a vertical threaded post which is tapped into the carrier and forward end of the body, as clearly shown. This post extends above the top of the body to receive a locking-nut 25. The post is preferably made removable and is locked in place by a cross-pin 26, which engages a recess 27 in the pin. The post is also shown as provided with a recess 28 to receive the upper end of the spring when the locking-nut is turned upward and the slide is raised. The slide is provided on its inner side with a recess 29, corresponding with recess 21 in the face of the carrier, which likewise receives a portion of the spring, the spring being, in fact, socketed in the two recesses 21 and 29 in the carrier and slide, respectively. The upper end of the spring bears against a shoulder 30 at the upper end of recess 29. The function of the spring is to raise the slide on the carrier when the locking-nut is turned upward, so that a tool may be inserted or removed without the necessity for moving or removing any part of the holder.

In assembling, the spring is first placed in position in the recess in the carrier, its lower

end resting upon the shoulder therein. Then the slide is placed upon the carrier and allowed to slip down to place, the upper end of the spring resting against the shoulder in the slide, and then the threaded post is turned to place and locked there by the cross-pin, and the locking-nut is turned down upon the post.

The operation is as follows: The tool is placed in the transverse recess in the head, which is amply long to receive it from above when the locking-nut is turned up and the slide is raised by the spring. The locking-nut is then turned down upon the post and engages the slide, which is forced downward and forward, and the wall at the forward end thereof is forced against the rear wall of the tool to lock it rigidly in place. It will be seen that the engagement of the angular forward end of the base of the tool with the correspondingly-shaped abutment makes the tool self-centering when the locking-slide is forced to place by the locking-nut, and, furthermore, that as the abutment overhangs the forward end of the base of the tool in the locked position and the forward end of the slide overhangs the rear end of the base of the tool the tool is positively locked against any movement whatever, either upward, downward, forward, backward, or laterally, and, furthermore, that the lateral and downward strain upon the tool in use is against the angular diameter of the head, thus presenting the greatest possible amount of metal to sustain the greatest strain of use and making it practically impossible to break the holder under any strain that can be brought to bear upon it under the ordinary or extraordinary conditions of use.

Having thus described my invention, I claim—

1. A tool-holder comprising a head having a transverse recess, an undercut abutment at the forward end of the recess, an inclined carrier at the back of the recess, a slide upon the carrier adapted to engage a tool, and means for forcing the slide against a tool to lock it in place in the holder.

2. A tool-holder comprising a head having a transverse recess, an undercut abutment at the forward end of the recess, an inclined carrier at the back of the recess, a slide upon the carrier adapted to engage the tool, a spring acting to raise the slide and means for forcing the slide against the carrier to lock it in place in the holder.

3. A tool-holder comprising a head having a transverse recess, an inwardly-inclined undercut abutment at the forward end of the recess, an inclined carrier at the back of the recess, a threaded post, a spring-actuated slide upon the carrier adapted to engage a tool and a locking-nut on the post adapted to bear against the slide and force it against the tool to lock the latter in place in the recess.

4. A tool-holder comprising a head having a transverse downwardly and rearwardly inclined recess, an undercut inwardly-inclined abutment at the forward end of the recess, an inclined carrier at the back of the recess, a slide upon the carrier whose forward end is a downwardly and rearwardly inclined wall and means for forcing the slide against a tool to lock it in the recess.

5. A tool-holder comprising a head having a transverse recess, an undercut abutment at the forward end of the recess, an inclined carrier at the back of the recess, a slide upon the carrier adapted to engage a tool, a spring socketed in the carrier and slide respectively, both of said parts being provided with a shoulder against which an end of the spring bears to normally hold the slide raised and means for forcing a slide against a tool to lock it in place in the holder.

6. A tool-holder comprising a head having a transverse recess, an undercut abutment at the forward end of the recess, an inclined carrier at the back of the recess having grooves at its base, a U-shaped slide engaging the carrier and having ribs engaging the grooves and means for forcing the slide against a tool to lock the latter to the holder.

7. The combination with a tool-holder comprising a head having a transverse recess, an undercut abutment at the forward end of the recess, and an inclined slide having a downwardly and rearwardly inclined forward end, of a tool having a base whose forward end is downwardly and forwardly inclined to engage the abutment and whose rear end is downwardly and backwardly inclined for engagement by the slide and means for forcing the slide into engagement therewith.

8. The combination with a tool-holder comprising a head having a transverse recess, an inwardly-inclined undercut abutment at the forward end of the recess and an inclined slide having a downwardly and rearwardly inclined wall at its forward end, of a tool having a base whose forward end is a downwardly and forwardly inclined obtuse angle and whose rear end is a downwardly and rearwardly inclined wall, a spring for normally raising the slide and means for forcing the slide against the tool-base whereby the tool is centered and rigidly locked against movement in any direction.

In testimony whereof I affix my signature in presence of two witnesses.

PEARL H. ROBINSON.

Witnesses:

EDW. W. KNEEN,

GEORGE W. CONKLIN.