July 29, 1924. 1,502,712

L. Y. CHARD

MULTIPLE PURPOSE TOOL HOLDER

Filed April 4, 1923

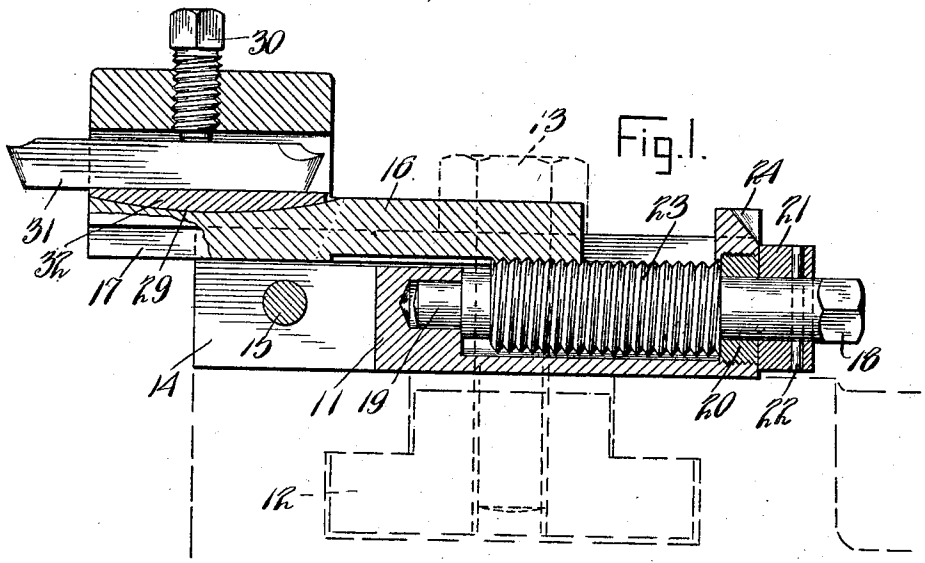


Fig. 1.

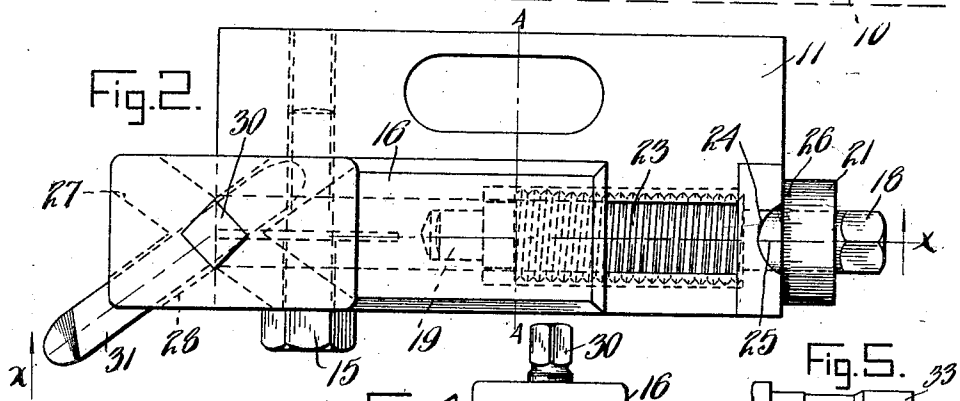


Fig. 2.

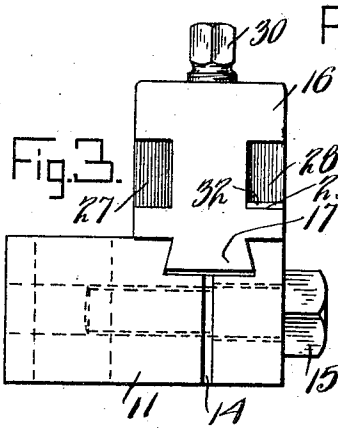


Fig. 3.

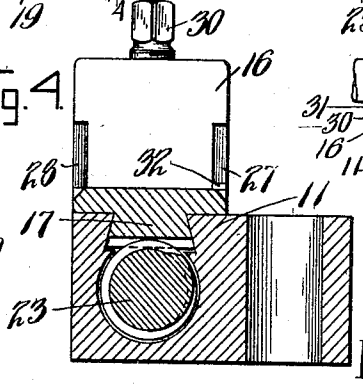


Fig. 4.

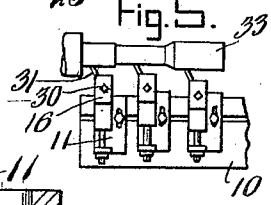


Fig. 5.

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UNITED STATES PATENT OFFICE.

LODGE Y. CHARD, OF NEWCASTLE, INDIANA.

MULTIPLE-PURPOSE TOOL HOLDER.

Application filed April 4, 1923. Serial No. 629,930.

To all whom it may concern:

Be it known that I, LODGE Y. CHARD, a citizen of the United States, residing at Newcastle, in the county of Henry and State of Indiana, have invented certain new and useful Improvements in Multiple-Purpose Tool Holders, of which the following is a specification.

My said invention relates to a multiple purpose tool holder intended primarily for use in lathes which shall provide for numerous and ready adjustments of the tool and which shall also provide means for holding different tools or for holding the same tool in different angular positions relative to the work as for right or left hand cuts respectively.

Referring to the drawings, which are made a part hereof and on which similar reference characters indicate similar parts,

Figure 1 is a side elevation of my device with parts shown in section for clearness of disclosure,

Figure 2 a plan of the same,

Figure 3 a front elevation thereof,

Figure 4 a section on line 4—4 of Figure 2, and

Figure 5 a plan of my device in operation.

In the drawings reference character 10 indicates a cross slide or reciprocatory carriage for supporting a tool slide or carrier base 11 and a clamp 12 for the tool slide or carrier base, the base and the clamp being movable transversely of the cross slide 10 and a bolt 13 being provided to draw them together into clamping relation to the cross slide 10 after such adjustment has been made. The tool carrier base 11 is divided longitudinally for a portion of its length by a cut 14 extending rearwardly from the front end thereof and a bolt 15 is located transversely of the cut to draw the parts together into clamping relation to the tool carrier 16. The tool carrier at its under side has a dove-tailed formation 17 moving in a slot in the upper face of the base 11, this slot being undercut at both sides to accommodate said dove-tail formation. At its rear end the carrier is provided with screw-threads engaged by threads on a shaft 18 having a squared head for convenience in turning to adjust the position of the tool carrier. This shaft is mounted in a recess on the tool carrier base 11 and has at its forward end a reduced part 19 journaled in a bearing on the base. At its rear end the shaft is journaled in a bushing 20 engaging a threaded opening in the base. This opening, as will be evident from consideration of the drawings, must be large enough to admit the enlarged threaded portion 23 of the shaft 18 and the object of the bushing is to close this opening and also to provide a readily renewable bearing for the shaft, if needed. A collar 21 fastened to the shaft by a pin 22 bears against the bushing 20 at one side and the end of the enlarged threaded portion 23 of the shaft bears against it at the other side thus limiting the axial movement of the shaft. The tool slide or tool carrier has a recess at 24 at the bottom of which is a zero mark at 25 and the collar 21 carries on its circumference a scale at 26 adapted to register with the zero mark at 25 to indicate the extent of adjustment of the tool carrier.

The tool carrier at its forward end is provided with a rectangular upward extension having a pair of intersecting diagonal openings 27 and 28 extending between opposite corners of the extension. Each of these openings is rounded at its underside as indicated at 29 and a screw 30 is provided at the intersection of the oblique openings so as to engage a tool placed in either one of them and lock it in place. In the present arrangement a tool 31 is shown in the opening at 28, this tool being indicated as a righthand cutting device and the opening 27 serving either for a tool of a different kind or for a left-hand cutter or the like. A filler-block 32 beneath the tool has a flat upper face engaging the under face of the tool and a rounded under face engaging one of the rounded faces of the tool slide. The filler-block provides a rocking or tilting adjustment for the tool in addition to those already described.

One of the most important features of my invention is that several diameters of the work can be operated on at the same time. As one illustration of such capacity I have shown in Figure 5 a piece of work 33 having three different diameters with three tools 31 each separately held in different bases 11 all mounted on the same cross slide or block 10. Adjustment of the tool slides or carrier at 16 according to the various diameters of the work by the means shown in the drawings enables me to finish three different faces at the same time.

Various other applications of the principle will suggest themselves to those skilled in the art.

By the use of my device it will be evident that the tool can be expeditiously moved lengthwise or crosswise of the work or set at different angles relatively thereto and after any such adjustment the parts can be clamped securely in position.

It will be obvious to those skilled in the art that my device may be modified in various particulars without departing from the spirit of the invention, therefore I do not limit myself to the specific parts and arrangement shown in the drawings and described in the specification but only as indicated in the appended claims.

Having thus fully described my said invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a lathe, a tool holder comprising a laterally adjustable base and a tool carrier in dovetailed engagement with said base and adjustable longitudinally thereof, means for clamping the same in adjusted position, intersecting diagonal tool-receiving openings at the forward end of the tool slide, and means at the intersection of said openings for clamping a tool in either opening, substantially as set forth.

2. In a lathe, a tool holder comprising a laterally adjustable base and a tool carrier in dovetailed engagement with said base and adjustable longitudinally thereof, means for clamping the tool-carrier in adjusted position, intersecting diagonal tool-receiving openings at the forward end of the tool slide, means at the intersection of said openings for clamping a tool in either opening, and means providing a rocking adjustment for a tool in one of said openings, substantially as set forth.

3. In a lathe, a tool holder comprising a laterally adjustable base having a yieldable guideway therein, means for clamping said base in adjusted position, a tool carrier adjustable longitudinally of said base and having a guide adapted to cooperate with said guideway, means for clamping the parts in adjusted position, intersecting diagonal tool-receiving openings at the forward end of the tool slide said openings having at one side a rounded face, a filler-block having a correspondingly rounded face at one side and formed at the opposite side to match a face of the tool, and means for clamping the tool in place, substantially as set forth.

4. In a lathe, a plurality of laterally adjustable tool holders each comprising a base and a tool carrier thereon, each of said bases having a guideway with yieldable jaws, a guide on said tool carrier adapted to be adjusted along said guideway, a threaded shaft swiveled in each of said bases, segmental threads on said tool carrier for cooperation with said threaded shaft whereby the tool carrier and tool may be moved toward and away from the work, and means for clamping the carrier and its base in adjusted position, substantially as set forth.

5. In a lathe, a laterally adjustable tool holder comprising a base and a longitudinally adjustable tool carrier, means for clamping said base to said cross slide, said base having a guideway with a slot extending therefrom, a guide on said tool carrier adapted to slide in said guideway, means on said guideway for clamping the guide therein, segmental threads on said tool carrier, a threaded shaft swiveled in said base for cooperation with said tool carrier for shifting the carrier toward and away from the work, substantially as set forth.

6. In a tool holder, a tool slide base having a guideway, a tool slide having a part movable in said guideway and having screw threads at its rear end, a threaded shaft engaging said threads located in a recess of the tool slide base, an integral wall at the rear end of said recess having an opening to receive said shaft, and a bushing in the opening providing a bearing for the reduced rear end of said shaft, substantially as set forth.

7. In a tool holder, a tool slide base having a guideway, a tool slide having a part movable in said guideway and having screw threads at its rear end, a threaded shaft engaging said threads located in a recess of the tool slide base, an integral wall at the rear end of said recess having an opening to receive said shaft, a nut in the opening providing a bearing for the reduced rear end of said shaft, a shoulder on the shaft bearing against said bushing, and a bushing secured to the shaft at the other side of said first-named bushing, whereby endwise movement of the shaft is prevented, substantially as set forth.

8. In a tool holder, a tool slide base having a guideway said base having a slit extending downward from said guideway, a tool carrier having a part movable in said guideway and having screw threads at its rear end, means for adjusting the carrier along said guideway, and a screw extending across the slit adapted to clamp the tool carrier in adjusted position, substantially as set forth.

9. In a lathe means adapted to operate upon work having different diameters, said means comprising a plurality of tool holders independently adjustable longitudinally and transversely of the work to be operated upon, each of said tool holders comprising a base and a tool carrier thereon, each of said bases having a guideway, a guide on said tool carrier extending into said guideway and means on said base cooperable with said guide for securing the guide in the

guideway and for adjusting the carrier toward and from the work to be operated upon, substantially as set forth.

10. In a lathe a plurality of laterally adjustable tool holders adapted to be supported in fixed spaced relation, each of said tool holders comprising a base and a tool carrier thereon, each of said bases having a guideway with yieldable jaws, a guide on said tool carrier adapted to be adjusted along said guideway, a shaft swiveled in each of said bases, means on said tool carrier for cooperation with said shaft whereby the tool carrier and tool may be moved toward and away from the work, and means for clamping the carrier and its base in adjusted position, substantially as set forth.

11. In a lathe, a tool holder comprising a base and a tool carrier, a guideway in said base having yieldable clamping jaws, means for contracting said jaws, a guide on said tool carrier adapted to slide between said jaws, and means for longitudinally adjusting said tool carrier, substantially as set forth.

12. In a lathe a laterally adjustable tool holder comprising a base and a longitudinally adjustable tool carrier, said carrier having a tool receiving opening with an arcuate slot in its face, a filler block in said slot for adjusting the angle of the tool, and means for clamping the tool in position in said opening, a guide on said tool carrier, a guideway on said base for cooperation with said guide said guideway having one end slotted for a portion of its length, means for clamping said guide and guideway in predetermined position, segmental threads on said tool carrier, and a threaded shaft swiveled in the base and in engagement with said segmental threads for moving the tool carrier and tool toward and away from the work, substantially as set forth.

In witness whereof, I have hereunto set my hand and seal at Newcastle, Indiana, this 17th day of February, A. D. nineteen hundred and twenty-three.

LODGE Y. CHARD. [L. S.]

Witnesses:
BRUNO LUNDGREEN,
ROSCOE B. ARNOLD.