

(No Model.)

I. P. RICHARDS.

ROTARY TOOL HOLDER FOR LATHES.

No. 469,377.

Patented Feb. 23, 1892.

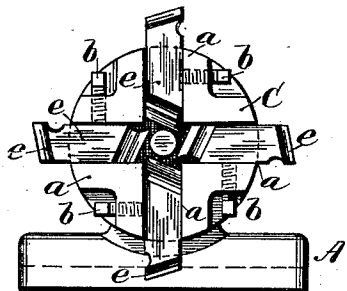


FIG. 1.

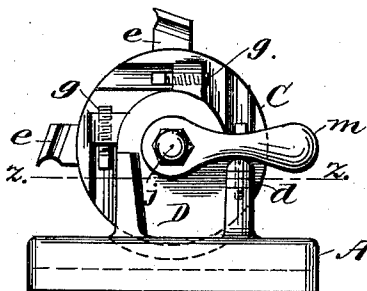


FIG. 3.

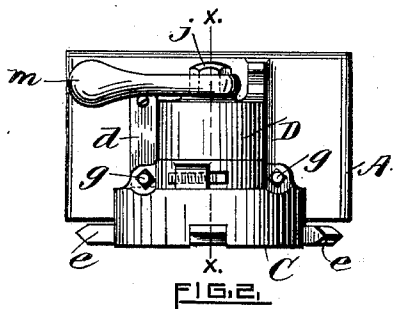


FIG. 2.

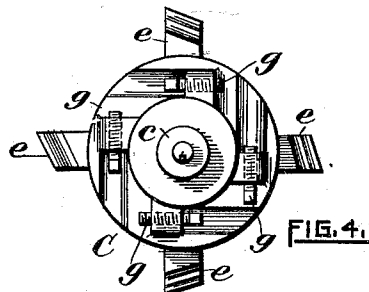


FIG. 4.

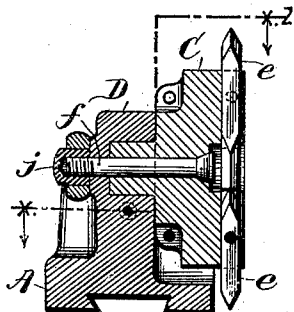


FIG. 5.

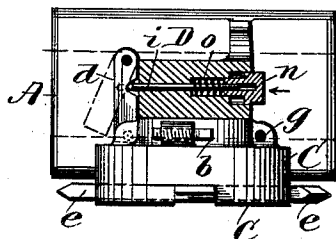


FIG. 6.



FIG. 7.

WITNESSES,

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UNITED STATES PATENT OFFICE.

ISAAC P. RICHARDS, OF PROVIDENCE, RHODE ISLAND.

ROTARY TOOL-HOLDER FOR LATHES.

SPECIFICATION forming part of Letters Patent No. 469,377, dated February 23, 1892.

Application filed April 30, 1891. Serial No. 391,160. (No model.)

To all whom it may concern:

Be it known that I, ISAAC P. RICHARDS, of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Rotary Tool-Holders for Lathes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to that class of appliances intended to facilitate the performance of lathe-machine work, that it may be more economically, accurately, and speedily accomplished; and it consists of improvements on the invention disclosed in my Letters Patent, No. 134,219, dated December 24, 1872. It is fully illustrated in the accompanying drawings.

Figure 1 is a front elevation of the head. Fig. 2 is a top view of the same. Fig. 3 shows a back elevation. Fig. 4 is a view of the back of the revolving head alone. Fig. 5 is a vertical section taken through the center of the arbor on line *x x*, Fig. 2. Fig. 6 is a horizontal section taken on line *z z*, Fig. 3. Fig. 7 shows two of the tools separate.

This apparatus consists of a bearing-block D, with a base-plate A, intended to be fitted on the gibbed ways of the tool-carriage of a lathe usually occupied by the tool-post, the place of which it takes. A bearing is made in this block to receive the journal of a vertically-revolving tool-holder, which is made up of parts as follows:

C is the circular head, held by a horizontal journal on its back in a bearing in the block D. It has, as shown, four radial channels *a*, made in its face at right angles to each other; but the number of these channels may be more or less, according to the size of the head C. These channels *a* are adapted to hold tools similar to those in use for turning, milling, and working on metal in a lathe. They are held therein by set-screws *b*, for which cavities are made in the head between the channels, the screws being fitted to screw through the flange between the cavity and the channel and bear on the tool *e* to hold it firmly against the opposite side of the channel. The open channel *a* to receive the tools

is one of the improvements over the mortises shown in my patent referred to, as they are more easily made correctly and give greater facilities for setting the tools, as it allows them to be turned to one side, if required, and a thicker or crooked tool can be easily held therein.

Another improvement consists in making the stop-bar *d* automatic in its operation, so that when the head is turned to bring up another tool toward the work the projection *h*, that holds the leveling-screw *g*, will push back the bar itself and not require it to be moved back with the other hand by a lever. This is done by pivoting the bar *d* at its back end in the slot, so that its front end will easily swing out when the projection *h* comes up against it and allow the projection to pass, the bar being drawn in back under it by a light spring *o*, (see Fig. 6,) which also shows the arrangement by which the bar *d* can be pushed out from the front, if desired, by pressing on the boss *n*, which is connected by a small rod *i*, pivoted to the bar *d* and screwed into a hole in the boss at its other end. The spring *o* is held on this rod so as to bear at one end on the boss and the other end against a shoulder of the recess that holds it. In Fig. 4 will be seen the projections or lugs *h*, through which the leveling-screws *g* are tapped, so as to bring their heads on top, where they can be easily turned to set the tool exactly right at once instead of being obliged, as before, to turn the head C up so as to get at the leveling-screw and turn it a little by guess, then turn down the head again on the stop-bar, and, perhaps, repeat this operation several times before getting it right, which made a loss of time with less satisfactory results.

The journal *c* that the head C turns on does not extend clear through the block, but the bearing is bored nearly through and a hole made in the center to receive the tightening-bolt *f*, that extends through the head and journal and out through this hole and has a screw-nut *j* fitted on its end, which by means of a wrench *m* will draw the bolt in and hold the head firmly to the block.

As the tools *e* are necessarily short and difficult to handle by a blacksmith in making or repairing, I make them with a cutting part on each end by means of milling-tools, so that

when used up on one end it can be turned end
for end and used as much longer. Then throw
it aside and take another instead of having
a blacksmith dress over the old one, made
5 still shorter and harder to hold by wear.

Having thus described my improvements, I
claim as my invention—

1. In a vertically-revolving head for hold-
ing tools used in lathe-work, having open ra-
10 dial channels made in its face to receive said
tools, the projections *h* made thereon, with
screws *g* tapped clear through them to adjust
the level of the tool while resting on the stop-
bar *d*, in combination with said stop-bar made

to operate automatically when the head is 15
turned, as herein set forth.

2. In a vertically-revolving head for hold-
ing tools used in lathe-work, the combination
of the head *C*, having projections *h*, and level-
ing-screws *g* passing through them, with stop- 20
bar *d*, pivoted as described, rod *i*, spring *o*,
and boss *n*, substantially as and for the pur-
pose set forth.

ISAAC P. RICHARDS.

Witnesses

BENJ. ARNOLD,
JAMES E. ARNOLD.