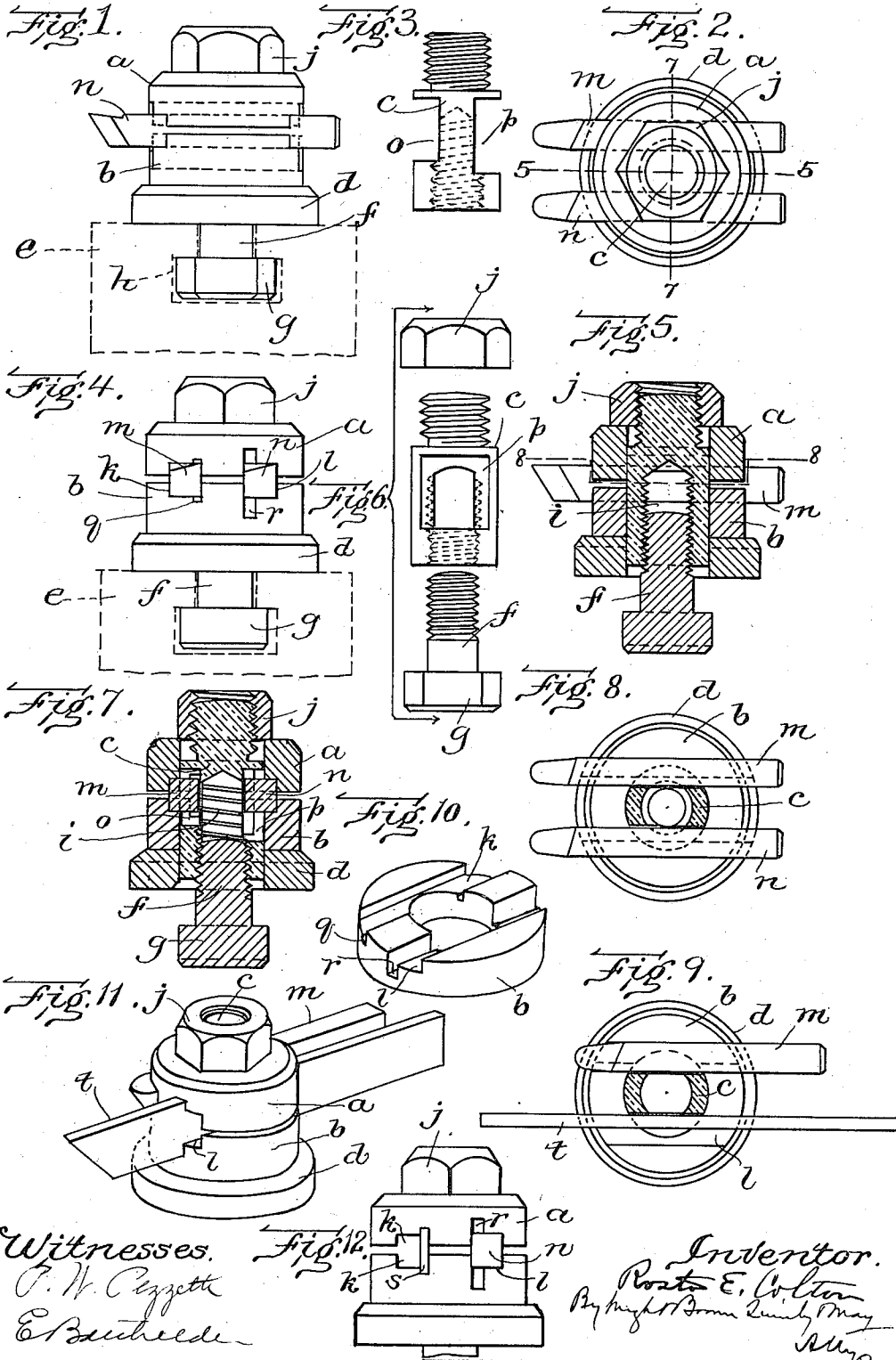


R. E. COLTON.
 HOLDER FOR MACHINE TOOLS.
 APPLICATION FILED JULY 8, 1909.

963,746.

Patented July 12, 1910.



Witnesses.
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UNITED STATES PATENT OFFICE.

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HOLDER FOR MACHINE-TOOLS.

963,746.

Specification of Letters Patent.

Patented July 12, 1910.

Application filed July 8, 1909. Serial No. 506,558.

To all whom it may concern:

Be it known that I, ROSTO E. COLTON, of Easthampton, in the county of Hampshire and State of Massachusetts, have invented certain new and useful Improvements in Holders for Machine-Tools, of which the following is a specification.

This invention relates to holders for machine tools, such, for instance, as the tools of engine lathes, and has for its object to provide a holder capable of mounting a plurality of tools for simultaneous operation on a piece of work and for interchangeably carrying tools of a different character for operations of various sorts. That is, more specifically my object is to provide a holder with provisions for carrying at one time two or more tools of similar character together with provisions for substituting one or more tools of a different character with a minimum expenditure of time.

An embodiment of my invention, which at the present time, I consider a preferable one, is illustrated in the accompanying drawings in which,—

Figure 1 represents an elevation of the tool holder. Fig. 2 represents a plan view of the same. Fig. 3 is an elevation of the post forming part of the holder. Fig. 4 is an elevation of the complete holder with the tools in place therein as seen from the left of Fig. 1. Fig. 5 is an axial section on the line 5—5 of Fig. 2. Fig. 6 is an elevation showing the post of the holder and the parts associated therewith for clamping the holder upon a tool slide and securing the tools in the holder. Fig. 7 is a longitudinal section of the complete holder on the line 7—7 of Fig. 2. Fig. 8 is a plan view of the parts below the line 8—8 of Fig. 5. Fig. 9 is a view similar to Fig. 8 showing the manner of substituting one tool for another of different character. Fig. 10 is a perspective view of one of the clamping collars forming part of the tool holder. Fig. 11 is a perspective view of the entire tool holder with a cutting-off tool in place. Fig. 12 is an elevation similar to Fig. 4, but showing the manner of mounting a cutting-off tool in the holder.

Referring to the drawings, the holder is shown as consisting of two clamping collars or members *a* *b* which are placed upon the post *c* and rest upon a base plate or pedestal *d*, which also surrounds the post and is

adapted to rest upon the ordinary tool slide or tool holder *e* of a lathe or other machine tool. The post *c* and associated rings or collars are secured upon the slide *e* by means of a bolt *f*, the head *g* of which is contained in the usual undercut groove *h* of the tool slide, and the shank of which is screwed into an internally threaded socket *i* in the post. A nut *j* is threaded upon the upper end of the post and serves a double purpose of clamping the lips of the tool slide groove *h* between the base plate or pedestal *d* and the head *g* of the bolt *f*, and also of crowding the tool clamps *a* and *b* together. These clamps are furnished with provisions for securing tools therein in a firm and accurate manner, such provisions consisting of channels formed partially in each clamp in the sides or faces thereof which lie nearest to one another.

The channels in the collar *b* are represented by the letters *k* and *l*, and are substantially counterparts reversed of complementary channels in the collar *a*. These channels receive the shanks of tools *m* and *n*, which are conveniently turning tools, and are adapted to be used simultaneously upon the same piece of work. In order that the tools or cutters may be separated from one another, the channels *k* and *l* are on opposite sides of the center or axis of the disks or clamps *a* and *b*, and these channels intersect the outer portions of the post *c*. In order that the tools may lie in the channels and past the post, the latter is formed at its opposite sides with recesses *o* and *p*, which are alined with the channels *k* and *l* when the collars and posts have the proper angular adjustment. When the shanks of the tools are set in the channels of the collars, the latter are clamped down by the nut *j*, whereupon the tools are firmly gripped and secured immovably in the correct position.

In order that tools of different characters than the tools *m* and *n* may be mounted in the same holder, such, for instance, as cutting-off tools which have greater depth and less thickness than turning tools, I form in the bottoms of the channels *k* and *l* the grooves *q* and *r* respectively, which are of less width than the channels and extend some distance beyond the bottoms thereof. These grooves are adapted to receive tools such, for instance, as the cutting-off tool *s* shown in Fig. 12, or the larger cutting-off

tool *t* shown in Figs. 9 and 11. These grooves are formed in the channels against the walls of the latter which lie nearest to the post, so that one wall of each of the shallower channels also forms a wall for the deeper groove, and the grooves are so located that enough stock is left in the outer portion of the clamps to support the tools with the required degree of rigidity.

10 In the embodiment of the invention here illustrated, the grooves are shown as parallel to each other, but such an arrangement is not essential, and it is within the contemplation of my invention that they be inclined to one another for a number of reasons, as illustrated and explained in a companion application, filed concurrently herewith, and bearing the Serial No. 506,557.

From the fact that the bolt *f* is independently engaged with the tool post *c*, it follows that the latter may be clamped to the tool slide independently of the clamping means for the individual tools. Thus, when the post is once set in position, the tool clamps *a* and *b* may be loosened and the tools adjusted, removed or replaced, and reclamped, without shifting or loosening the entire holder.

I claim:

30 1. A tool holder, comprising a pair of clamps and a post upon which said clamps are placed, the clamps having complemental channels in their adjacent faces to receive the shank of a tool, and said channels being grooved to contain a deeper and narrower tool than that fitting the channel.

2. A tool holder, comprising a post and clamps surrounding said post, one of said clamps having channels on different sides of the center of the post, and said channels having narrow grooves in their bottoms, the groove of one channel being deeper than that of the other.

3. A lathe tool holder arranged to carry

interchangeably a number of various tools, comprising a pair of clamping collars and a post on which said collars are mounted, said collars having channels to contain the shanks of tools, parts of such channels being shallow relatively to their width and other parts being relatively deep, whereby tools having shanks varying in depth and width may be secured therein.

4. A lathe tool holder arranged to carry interchangeably a number of various tools, comprising a pair of clamping collars and a post on which said collars are mounted, said collars having channels on opposite sides of their center to contain the shanks of tools, which channels are grooved to a greater depth on the side thereof nearest to the center of the clamps.

5. A lathe tool-holder arranged to carry interchangeably a number of various tools and to be adjustably clamped upon a tool slide or carriage, comprising a post, a clamping bolt threaded into said post, clamping collars surrounding said post and having complemental grooves to receive a tool or tools, and a clamping nut threaded upon said post for crowding said collars together.

6. A lathe tool-holder comprising a post having a recess in its side, clamping collars surrounding said post and having complemental channels in their adjacent faces adapted to contain a tool shank and movable into alinement with the recess in said post, means on said post for crowding said clamps toward one another, and an independently adjustable clamping bolt for securing the said post upon a tool slide or equivalent holder.

In testimony whereof I have affixed my signature, in presence of two witnesses.

ROSTO E. COLTON.

Witnesses:

CHARLES G. BUTTERFIELD,
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