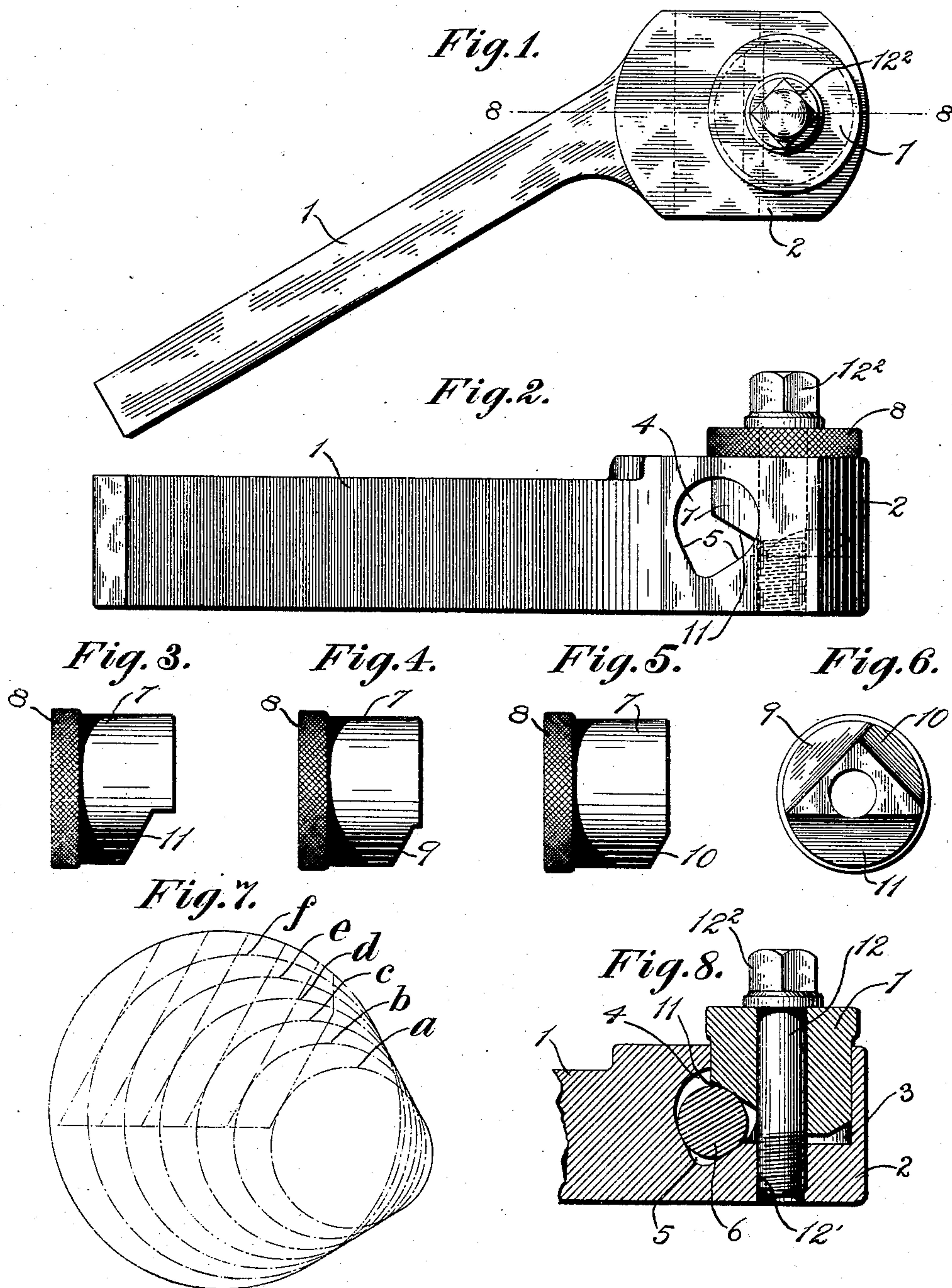


No. 898,395.

PATENTED SEPT. 8, 1908.

A. L. VALENTINE.  
CUTTER HOLDER.

APPLICATION FILED APR. 18, 1906.



**Witnesses:**  
*S. S. Grotta.*  
*J. E. Anderson.*

**Inventor:**  
*August L. Valentine*  
*By his Attorney,*  
*Wm. H. F. Gladwin*



# UNITED STATES PATENT OFFICE.

AUGUST L. VALENTINE, OF HARTFORD, CONNECTICUT, ASSIGNOR TO PRATT & WHITNEY COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF NEW JERSEY.

## CUTTER-HOLDER.

No. 898,395.

Specification of Letters Patent.

Patented Sept. 8, 1908.

Application filed April 18, 1906. Serial No. 312,423.

*To all whom it may concern:*

Be it known that I, AUGUST L. VALENTINE, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Cutter-Holders, of which the following is a specification.

This invention relates to holders for turning, boring, and other tools, said holders to be held in a tool-post or other device to present the tool properly to the work.

Primarily the object of the invention is the provision in connection with a stock or holder of means for readily clamping thereto tools having shanks of different diameters.

A further object of the invention is the provision of a cutter-holder having a seat with inclined walls against which the shank of the tool may be forced by a suitable appliance.

A further object of the invention is the provision of a device of the kind mentioned provided with a bushing having a beveled or inclined face, and of means for forcing said bushing upon the shank of the tool.

Other objects of the invention will be hereinafter set forth in the detailed description of the same which now follows:

In the accompanying drawings, Figure 1 is a plan view of the improved tool-holder. Fig. 2 is a side elevation of the same. Figs. 3, 4, and 5 are side elevations of the thimble or bushing employed. Fig. 6 is an end view of said thimble or bushing. Fig. 7 is a diagrammatic view illustrating the manner in which tools having shanks of different diameters may be securely clamped in the same holder. Fig. 8 is a partial longitudinal vertical section taken on line 8—8 of Fig. 1, and illustrating the manner in which the shank of the tool is clamped in its seat.

Like numerals designate similar parts throughout the several views.

Referring to the drawings, the numeral 1 designates a shank adapted to be secured in the tool-post of a slide-rest or other device with which the invention may be employed, and the numeral 2 a head offset from said shank. In the head 2 is formed a chamber 3 communicating laterally with a transverse bore 4, provided at its lower end with inclined or substantially V-shaped opposing-walls 5, which may be joined by a curved

bottom, although this is immaterial, said bore constituting a seat or pocket for a tool 6 (Fig. 8), shown having a cylindrical shank, although tools having other forms of shank may be utilized without departure from the invention. In the chamber 3 is fitted a perforated thimble or bushing 7 with a knurled flange 8, said bushing having on its lower end a series of inclined surfaces 9, 10, 11, which in use will subserve the purposes hereinafter described. A bolt 12 passing through the bore of the bushing 7, is threaded at its lower end into the stock at 12', and is provided at its opposite extremity with a flanged manipulating head 12<sup>2</sup>, as illustrated in Figs. 1, 2 and 8.

Referring to the diagrammatic view, Fig. 7, the dotted circles represent a series of tool-shanks of different diameters, and the bearing of the inclined or wedge-like faces on the under side of the bushing 7 against said shanks of different diameters. From this diagram, it will be seen that the smallest size *a* of tool-shank, illustrated in said diagram, will largely fill the space between the inclined walls 5 of the seat or pocket in the holder, and that the bearing point of the incline 11 on the lower surface of the bushing 7, will be upon a line slightly tangent to the periphery of said shank *a*, so that when the bolt 12 is threaded into its seat in the stock, the bushing will be forced downward under great pressure, and will clamp the tool-shank securely within the pocket. Referring to the same diagram, tool-shanks of other diameters are designated by the lines *b*, *c*, *d*, *e* and *f* and the bearing-points of the wedge-surfaces at the end of the bushing 7 will bear the respective relations to said shanks, as illustrated. By loosening the bolt 12, and grasping the knurled flange of the bushing 7, said bushing may be readily turned within the chamber in which it is fitted to present any of its inclined-surfaces in a position to act upon the tool-shank. When tools having shanks of large diameter are employed the bushing will be rotated to bring the inclined surface 9 or 10, as circumstances require into place for engaging the shank. In this way the same holder may be utilized for securing tools having shanks varying in diameters, and as the shank is placed in its socket, the action of the inclined-surface bearing upon it is to force said shank down between the



inclined walls 5, and to firmly clamp the same in the seat or pocket between said walls, as illustrated in Fig. 8.

Chattering of the tool-shank is impossible with the construction described, and a firm and rigid grip is provided upon said tool-shank.

Changes may be made in the form of the stock or holder, without departure from the invention, and other means, as substitutes for the bolt, may be employed for forcing the rotary thimble or bushing with its inclined-surface upon the tool-shank. So too, these inclined surfaces may be of different pitch from what is illustrated in the drawings, without departure from the invention.

Having thus described my invention what I claim is—

1. A stock or holder having a head provided with a chamber, and a passage at an angle to, and communicating with, the chamber, said passage having divergent walls at its lower side, combined with a rotary bushing having a series of inclined surfaces on its lower extremity; and means passing through the bore of the bushing for forcing said bushing against a tool-shank inserted in the passage.

2. The combination, with a holder pro-

vided with an enlarged and chambered head at one end, and with a passage having divergent walls to form a pocket, said passage communicating with the chamber of the head, of a perforated bushing fitting in the chamber of the head, and having a manipulating flange at its upper end, and a plurality of inclined surfaces at its lower end; and means passing through the bore of the bushing for forcing said bushing into the chamber.

3. The combination, with a holder, having a head provided with a chamber, and with a passage at right angles to said chamber and communicating therewith, said passage having divergent walls, of a perforated bushing fitted within the chamber, and having at one end a knurled flange, and at its opposite end, a series of angularly separated inclined-surfaces at different distances from one end, and a bolt passing through the perforation of the bushing, and threaded into the stock below the chamber in the head.

In testimony whereof I affix my signature in presence of two witnesses, at Hartford, Connecticut, this 26<sup>th</sup> day of March, 1906.

AUGUST L. VALENTINE.

Witnesses:

F. G. CLARK,  
E. D. CLARK.