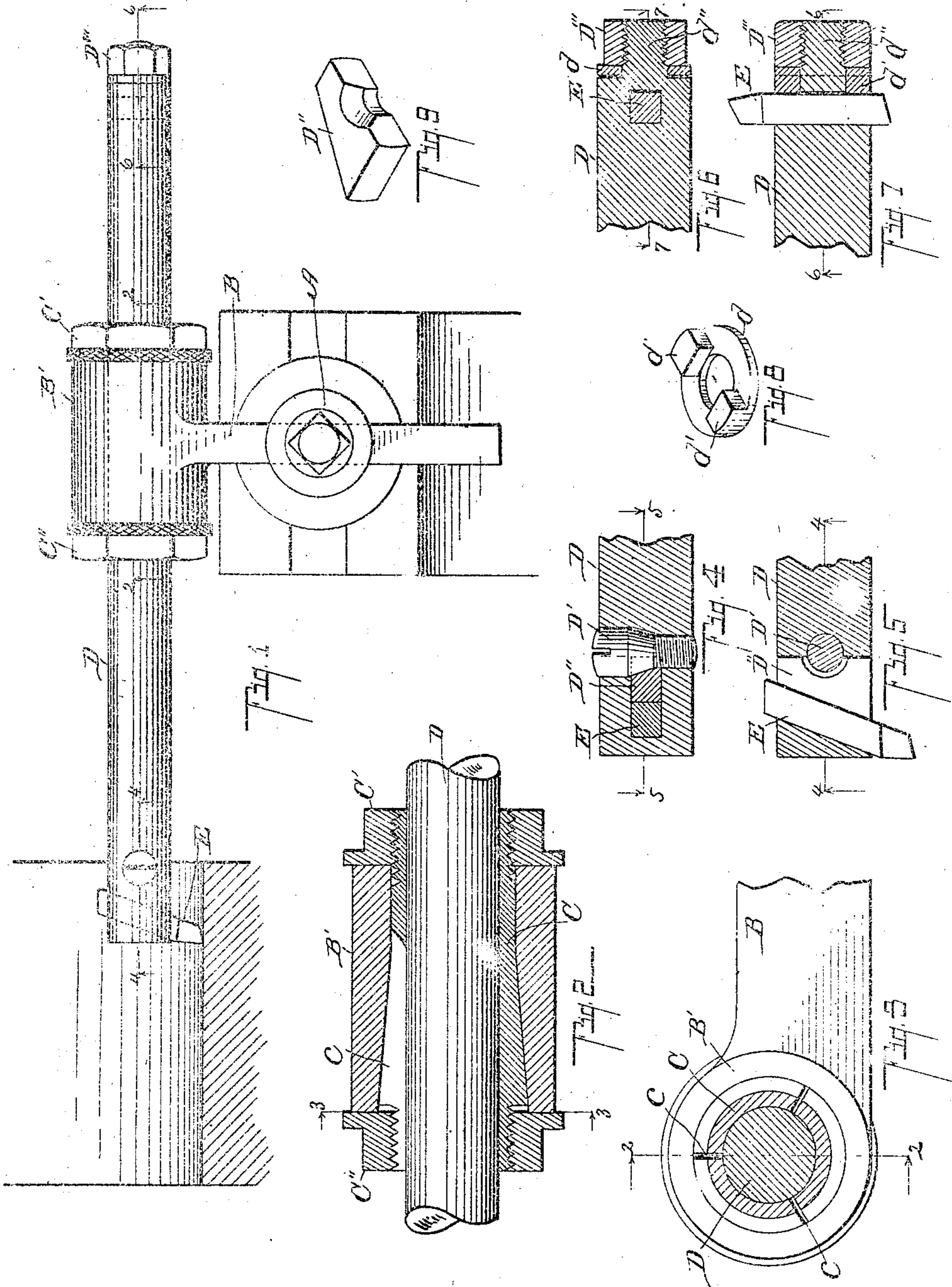


C. E. BOWN.
TOOL HOLDER.

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804,504.



Witnesses:

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UNITED STATES PATENT OFFICE.

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TOOL-HOLDER.

No. 904,504.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES E. BOWN, a citizen of the United States, residing at the city of Battle Creek, county of Calhoun, State of Michigan, have invented certain new and useful Improvements in Tool-Holders, of which the following is a specification.

This invention relates to improvements in tool holders.

The objects of this invention will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is clearly illustrated in the accompanying drawing forming a part of this specification, in which—

Figure 1 is a plan of my improved tool holder, it being shown in connection with the tool post of a lathe, and in its operative relation to a piece of work. Fig. 2 is an enlarged detail longitudinal section, taken on a line corresponding to line 2—2 of Figs. 1 and 3, the bar D being shown in full lines. Fig. 3 is a detail cross-section, taken on a line corresponding to line 3—3 of Fig. 2. Fig. 4 is an enlarged detail taken on a line corresponding to line 4—4 of Figs. 1 and 5, the clamping screw D' being shown in full lines, showing the manner of securing the tool as E at one end of the bar D. Fig. 5 is a detail section, taken on a line corresponding to line 5—5 of Fig. 4, the tool E and the clamping block therefor D'' being shown in full lines. Fig. 6 is an enlarged detail longitudinal section, showing a means for securing the tool to the bar, taken on a line corresponding to line 6—6 of Figs. 1 and 7. Fig. 7 is a detail longitudinal section taken on a line corresponding to line 7—7 of Fig. 6, the tool, as E, being shown in full lines. Fig. 8 is a perspective of the tool clamping member d. Fig. 9 is a perspective of the tool clamping member D''.

In the drawings, similar letters of reference refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawings, A represents the tool post of a lathe.

The shank B of my improved tool holder is of any desired size or form. On its forward end is a head B' arranged at right angles thereto. This head has a hole longitudinally therethrough, which hole has an expanded cone-like portion at one end, and preferably a portion of even diameter at the other end.

Within the head B' is a shell-like clamping member C. This member C has a conical portion to fit the conical portion of the head. This conical portion of the clamping member is slitted at c. The clamping member C is threaded to receive the nut C' which bears against the end of the head. By tightening this nut, the member C is drawn into the head, thereby clamping it upon the bar as D. The slitted end of the clamping member C is also preferably threaded to receive a nut as C'' which bears against the end of the head B', so that the member C can be drawn out from the head to release the bar, it only being necessary to ease off the clamping nut C' and tightening the nut C''.

It is evident that the bar C can be very securely clamped in this manner and that the adjustment may be very quickly made. The structure is very strong and is particularly adapted for heavy work, although it is desirable for any work where such a holder is applicable.

The bar D is preferably a straight bar of even diameter from end to end. One end of the bar D has a slot-like opening there-through, the forward wall of which is forwardly inclined. This forms a seat for the tool, the tool resting against the inclined wall of the slot. The tool E is clamped in its adjusted position in the slot by the clamping block D'' and the clamping screw D'. The clamping block D is adapted to fit into the slot behind the tool, the block being wedge shape.

The screw D' is arranged transversely through the bar at the rear of the clamping block, and is provided with a conical portion which engages on the tapered groove formed in the rear edge of the wedge block D', so that by means of the screw, the wedge block is forced upon the tool to clamp it. The other end of the bar is provided with a transverse hole therethrough. The tool, as E, is inserted through this opening and is clamped therein by the clamping member d.

This clamping member is provided with inwardly projecting lugs d' ,—see Fig. 8— which project into the hole, and engage the tool arranged therein. The bar D is suit-
5 ably notched to receive the lugs.

The clamping member d which is washer-like in form, is arranged upon the threaded projection d'' . With the tool as E arranged
10 through the bar, the clamping member d is forced against it to clamp it in the bar by means of the nut D''' . By this arrangement, the tool is held in a very secure and rigid manner. It is evident that the clamp-
15 ing means is very simple, economical, and durable in use. By thus forming the bar, the tool may be changed from end to end as desired, according to whether it is desired to hold the tool at right angle to the bar or inclined thereto.

20 I have illustrated and described my improved tool holder in detail in the form preferred by me on account of structural simplicity and economy and convenience in manipulation. However, I am aware that it is
25 capable of considerable variation in structural details without departing from my invention.

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

30 1. In a tool holder, the combination of a shank, having a head with a longitudinal hole therethrough, said hole having a portion of uniform diameter at one end, and
35 an expanding cone-like portion towards the other; a clamping member adapted to receive a tool bar or shank, having threads at each

end, and having a portion of uniform diameter at one end, and a longitudinally slotted
expanding cone-like portion towards the 40 other, arranged in said head; and nuts for each end of said clamping member, arranged to bear against the ends of said head, for the purpose specified.

2. In a tool holder, the combination of a 45 shank, having a head with a longitudinal hole therethrough, said hole having a portion of uniform diameter at one end, and an expanding cone-like portion towards the other; a clamping member adapted to re- 50 ceive a tool bar or shank, and having a portion of uniform diameter at one end, and a longitudinally slotted expanding cone-like portion towards the other, arranged in said head; and a nut threaded upon said clamp- 55 ing member for drawing it into said head, for the purpose specified.

3. In a tool holder, the combination of a shank, having a head with a longitudinal cone-shaped hole therethrough; a clamping 60 member adapted to receive a tool bar or shank, having threads at each end, and having a longitudinally slotted cone-shaped portion arranged in said head; and nuts for each end of said clamping member arranged 65 to bear against the ends of said head, for the purpose specified.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

CHARLES E. BOWN. [L. s.]

Witnesses:

FRANCIS A. KULP,
JENNIE IRENE KULP.