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J. N. PETERSON

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TOOL HOLDER

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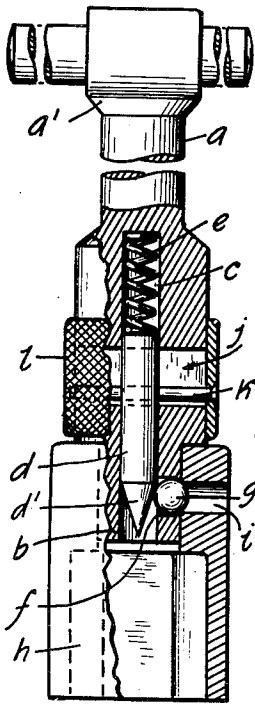


Fig. 1.

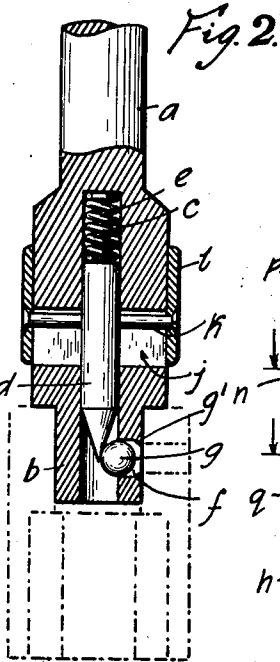


Fig. 2.

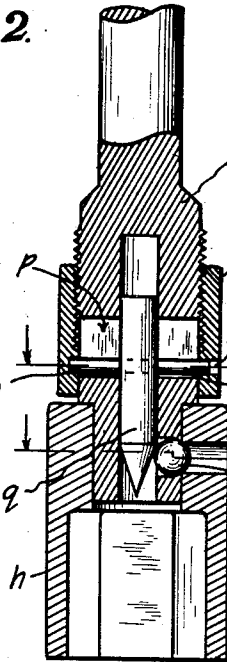


Fig. 4.

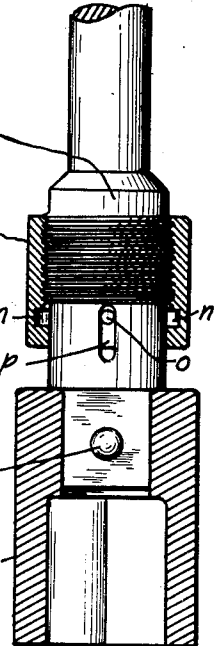


Fig. 5.

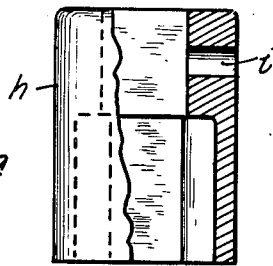


Fig. 2a

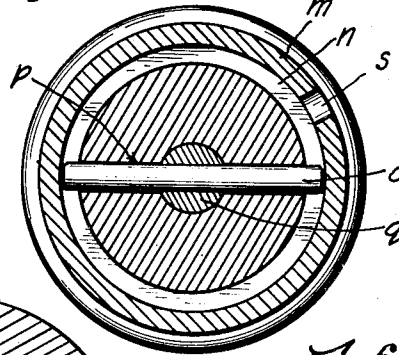


Fig. 6.

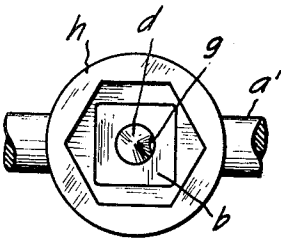


Fig. 3.

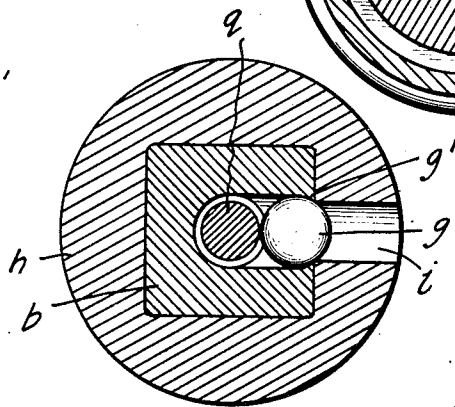


Fig. 7.

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# UNITED STATES PATENT OFFICE

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## TOOL HOLDER

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My invention has for its object the providing of a tool-holder comprising a shank, which may constitute the operating handle or an extension of such handle, provided with simple and relatively inexpensive means for securing and firmly holding therein a tool, such, for example as a socket wrench, boring implement or other working member; such means to be adapted to engage the shank readily with the working member, at the same time permitting the holding means to be as readily operated to release the working member.

A further object of my invention is to provide a tool-holder of strong construction, so as to be adapted for relatively heavy work with negligible wear.

I attain my object in a tool holder comprising a member having a longitudinal bore, another member adapted to be inserted in such bore, said members being respectively provided with lateral registering cavities movably holding a locking ball, which in one position interlocks said members, and I provide means for securing said locking ball in its said interlocking position.

Two variations of one specific mode of carrying my invention into practice is detailed in the accompanying drawing and hereinafter fully described with reference to the construction and operation.

In such drawing:

Fig. 1 shows in a sectional elevation, one type of my tool-holder, including a spring control, with the two members interlocked by my locking means assembled;

Fig. 2 is a similar view as Fig. 1 showing the locking ball released and the working member detached from the shank of the tool-holder; the working member being shown by Fig. 2a;

Fig. 3 shows a lower end view or plan of Fig. 1;

Fig. 4 shows a sectional elevation of the modified type of my tool-holder, not including a spring control;

Fig. 5 illustrates in sectional elevation the same type tool-holder as shown by Fig. 4;

Fig. 6 shows a transverse section on the line 6-6 of Fig. 4 but on a larger scale; and

Fig. 7 shows a transverse section on the line 7-7 of Fig. 4 but on a larger scale.

Referring first to the type of my tool-holder illustrated by Figs. 1 and 2: The shank *a* of the handle *a'* has a reduced extension *b* and a bore *c*. In said bore is reciprocally contained a pin *d* having a tapered or pointed end *d'* and normally held in one position by a spring *e*. The bore in the reduced extension *b* is provided with a lateral cavity *f* in which is seated a locking ball *g*, and the outer edge of the said cavity is restricted as at *g'* to prevent the locking ball from rolling out. Said locking ball is of greater diameter than the thickness of the wall in which it is contained.

*h* represents a wrench head which is preferably provided with a lateral cavity *i* which, as will be noted, is of smaller cross section than the diameter of the locking ball. However, should the wrench head *h* not be provided with the cavity *i*, the pressure of the locking ball against its interior wall will hold the same securely to my tool hold. The especial advantage of this feature is that a standard set of socket wrenches or the like may be used, which are not ordinarily provided with a recess in their interior walls.

The shank *a* is further provided with a transverse slot *j* in which slides a pin *k*, the ends of which are fastened in a sleeve *l*. By raising the sleeve *l* the pin *d* is moved up against the tension of the spring *e* thus permitting the locking ball *g* to move from the position in which it is shown in Fig. 1 to its position in Fig. 2 and consequently the wrench head may be taken off the shank *a*.

Referring next to Figs. 4 and 5: The parts there shown are in general construction and operation similar to my tool-holder illustrated by Figs. 1 and 2, with the following exceptions.

The sleeve *m* is threaded on the shank *a2*. The sleeve *m* is provided with a slot *n* in which bears a pin *o* relatively rotatable, the pin sliding in a transverse slot *p* similar to the slot *j* of the first described construction; thus as the sleeve *m* is screwed up or down, the pin *o* is raised and lowered and therewith the pin *q* for the purpose of secur-

ing in place and releasing again the locking ball *r*.

The sleeve *m* is made with a hole *s* through which to insert the pin *o*, the same having a tight fit in the pin *q*. Parts not specifically described in the structure shown in Figs. 4 and 5 will be understood to be similar to the like parts shown in Figs. 1 and 2.

I claim:

10 1. In a tool-holder, a shank provided with a longitudinal bore, the wall of which is provided with a lateral cavity, a member provided with a bore adapted to receive said shank, the wall of such bore provided with a  
15 cavity registering with the shank's cavity, a locking ball located in the cavity of said shank being of greater diameter than the thickness of the wall of said shank, a spring controlled bolt reciprocable in said bore of  
20 the shank said bolt having a tapered end, in one position limiting the inward movement of said locking ball, in another position causing said locking ball to lock said member on the shank, said bolt having a transverse pin  
25 slidable in guide slots therefor provided in the shank and a sleeve longitudinally movable on said shank with which sleeve the extremities of said pin are connected.

2. In a tool-holder, a shank provided with  
30 a longitudinal bore, the wall of which is provided with a lateral cavity, a member provided with a bore adapted to receive said shank, the wall of such bore provided with a cavity registering with the shank's cavity, a locking  
35 ball located in the cavity of said shank being of greater diameter than the thickness of the wall of said shank, a bolt reciprocable in said bore of the shank, said bolt having a tapered end, in one position limiting the inward  
40 movement of said locking ball, in another position causing said locking ball to lock said member on the shank, said bolt having a transverse pin slidable in guide slots therefor provided in the shank, and a sleeve longitudinally adjustable on said shank with  
45 which sleeve the extremities of said pin are connected.

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