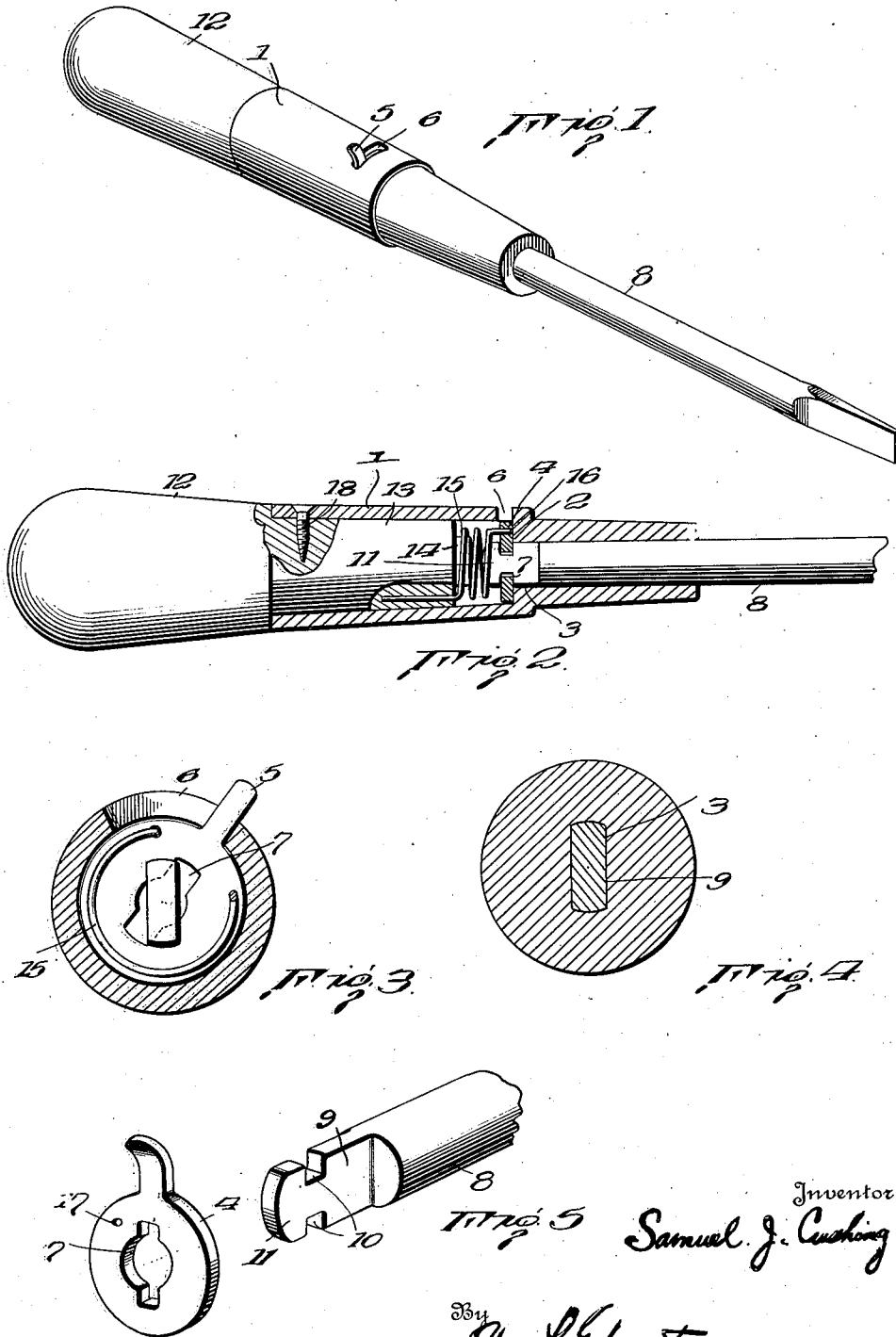


S. J. CUSHING.
 TOOL HOLDER,
 APPLICATION FILED AUG. 27, 1920.

1,413,101.

Patented Apr. 18, 1922.



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TOOL HOLDER.

1,413,101.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, SAMUEL J. CUSHING, a citizen of the United States, residing at Chelsea, in the county of Suffolk and State of Massachusetts, 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, having for an object to provide a quick detachable holder for various forms or types of tools such as, for example, screw drivers, augers, tire pullers, etc., whereby these tools may be readily changed such as conditions or preference may dictate, and thus eliminate the necessity of employing a special holder or handle individually on each of said tools.

It is also an object of the invention to provide an improved tool holder in which there is arranged a simple but effectual and durable form of connection with which the tool to be used is engaged and secured in proper position therein without liability of slipping or other undue movement of the tool so secured or the accidental disengagement of the tool from such holder.

Other objects will be in part obvious and in part pointed out hereinafter.

In order that the invention and its mode of operation may be readily understood by persons skilled in the art, I have in the accompanying illustrative drawings and in the following detailed description based thereon, set out a preferred embodiment of the same.

In the drawings:

Figure 1 is a perspective of the improved screw driver holder;

Figure 2 is a fragmentary longitudinal section therethrough;

Figure 3 is a transverse section through the same;

Figure 4 is a similar view, the section being taken through the shank portion of the tool to be engaged in the holder; and

Figure 5 is a fragmentary disassembled detail and perspective showing the holder catch and the particularly formed engaging end of the tool.

Having more particular reference to the drawings in connection with which like characters of reference will designate corresponding parts throughout the several views, the improved tool holder may be stated to comprehend a tapered chuck or shell, indicated in its entirety by the numeral 1, hav-

ing a tool receiving socket formed in the reduced end thereof and being formed with an intermediate wall 2 provided with a substantially rectangular slot 3 into which the specially prepared end of the shank of the tool, hereinafter described, is adapted to be introduced.

As means for connecting the inner end of the tool shank to the improved holder, there is arranged within said shell an oscillatable locking disk 4 having a finger piece 5 extending laterally from a portion of its peripheral surface and passing through a slot 6 formed in the shell and disposed transversely thereof, as clearly shown in the Figure 3, it being noted in this connection that the slot 6 is positioned at a point adjacent that side of the intermediate wall 2 which is engaged by the shoulder end of the tool shank. The disk 4 is formed with a slot 7 corresponding to the slot 3 in the wall 2, and in consequence, when alined with said slot 3, will permit the ready withdrawal of the tool shank from engagement with the holder, but when disalined with respect to said slot 3, portions of the locking disk 4 will engage the shank and, hence, prevent its disengagement from the holder.

Upon the free ends of the shanks of those tools which are adapted to be used in conjunction with my holder, such as indicated by the reference numeral 8, I may, and preferably do, form a reduced extension or tongue 9, cutting the same on its opposite sides as at 10 to provide a head 11 therefor. It will be understood, of course, that the extension or tongue 9, corresponds in its cross-section shape to the rectangular slots 3 and 7, and with the insertion of the tool shank into the socket of the shell 1, said tongue will be permitted to pass freely through the alined slots 3 and 7 formed in the intermediate wall 2 and the disk 4 respectively, the headed portion 11 of the tongue being arranged slightly beyond the disk 4 in order that the oppositely disposed cuts 10 therein will be positioned to permit the passage of the inner portions of the disk therethrough, thus permitting of rotation of said disk to a position whereat the slot 7 will disaline with the slot 3, and, accordingly, engage said head 11 and lock the tool in its engaged position with respect to the shell 1 whereby to prevent any attempts at longitudinal disengagement from said shell

or holder. Obviously, the extent of rotary movement of the locking disk 4 will be regulated by the length of the slot 6 formed in the shell, so that the locking and unlocking operations thereof will be positive.

A handle 12 provided with a reduced inner end 13 is adapted to be engaged in the enlarged portion of the tapered shell 1, and has a shoulder 14 formed on the inner end of such reduced portion, with which one end of the coil spring 15 is engaged, the remaining end of said spring being bent at substantially right angles to provide a finger 16, which is engageable in an opening 17 formed in the disk 4. The engagement of the finger 16 with the locking disk is such as to normally maintain the same in a position whereat the rectangular slot 7 will be disalined with the corresponding slot 3, and because of this, it will be appreciated that the tool shank 8 will be normally connected to the holder and secured against longitudinal movement with respect thereto.

In using my improved tool holder, to interchange tools, the lateral finger piece 5 is engaged and forced to the opposite side of the slot 6, whereupon the slot 7 in the disk 4 will aline with the slot 3 in the intermediate portion of the wall 2, and thus permit the free disengagement of the inner end of the shank from the holder. The lateral finger 5 is held in this position adjacent the opposite end of the slot 6, and a shank of a different form of tool is then moved into the socket of the shell 1 until the headed inner end thereof reaches the limit of its inward movement, whereat the shoulders provided for by the forming of the reduced tongue 9 will engage with the adjacent face of the intermediate wall 2. At this time, the finger 5 is released, whereupon the locking disk 4 under influence of the coil spring 15, will be immediately moved or snapped to its normal position, thereby disalining the slot 7 in such disk from the slot 3 in the intermediate wall, and engaging the disk with the headed inner end of the newly inserted tool shank, whereby to prevent longitudinal displacement of said tool.

The handle 12 may be secured in any suitable fashion in the shell 1, as, for illustration, by passing the screw 18 through the shell 1 into engagement with the reduced inner end 13 of said handle.

While I have hereinbefore described in some detail that my improved form of tool is adapted to interchangeably receive tools of different forms of types, it is to be also understood that the holder may be equally well adapted for securing tools of different sizes, such as screw drivers, which are of different sizes; augers, which are of different sizes, etc.

Manifestly, the construction shown is capable of considerable modification, and such

modification as is within the scope of my claims, I consider within the spirit of my invention.

I claim:

1. A tool holder, including a tapered shell, having an intermediate wall therein and formed with a rectangular slot, a disk rotatable in said shell formed with a rectangular slot alinable with said first slot, and arranged adjacent one side of the intermediate wall, said disk having manually engaging means extending laterally therefrom through a transverse slot in the adjacent portion of the shell, a handle engaged in the enlarged end of the shell, and means interposed between said disk and handle for normally maintaining the disk in its locking position.

2. A tool holder, comprising in combination with a tool shank, the inner end of which is formed with a reduced headed tongue, a tapered shell having the reduced end thereof formed to receive said inner end of the tool shank, an intermediate wall in the shell formed with a rectangular slot adapted to snugly receive the reduced tongue of the tool shank therein, a rotatable locking disk in said shell on the opposite side of the intermediate wall having manually engaging means extending laterally therefrom through a transverse slot formed in the adjacent portion of said shell, said disk being provided with a rectangular slot corresponding to the slot in the intermediate wall and adapted to receive the headed end of the reduced tongue therethrough, a handle engaged in the enlarged end of said shell, and spring means engaging said handle and locking disk for normally maintaining the disk in a position whereat the rectangular slot therein will be disalined with the corresponding rectangular slot in the intermediate wall to effect connection between said inner end of the tool shank and the holder.

3. A tool holder including a shell having an intermediate wall therein and formed with a squared slot, a rotatable locking disk within the shell and having a slot for registration with the slot in the intermediate wall, and a spring engaging the disk and operating to press the disk against the intermediate wall and to hold the disk normally in locking position.

4. A tool holder including a shell having an intermediate wall therein, said wall being formed with a squared slot and the shell being provided with a slot in its periphery near the intermediate wall, a locking element within the shell provided with a slot adapted to be turned to positions in and out of registration with the openings in the intermediate wall, a spring for rotating the disk to one of said positions and manual means on the locking element and projecting through the slot in the periphery of the shell for rotating the disk against the ten-

sion of the spring and to the other of said the disk in locking position and manual 10
positions. means to rotate the disk to unlocking po-

5 5. A tool holder comprising a shell pro-
vided with an opening to receive a tool
shank, a locking disk within the shell pro-
vided with a slot to register with the open-
ing in the shell, a handle projecting into
the shell and a spring engaging the handle
and the locking disk for yieldingly holding

In testimony whereof I affix my signature
in the presence of two witnesses.

SAMUEL J. CUSHING.

Witnesses:

MAURICE CARO,
LIBBIE SCHMITZLER.