April 18, 1939. W. R. FISHER 2,154,738

PUNCH HOLDER

Original Filed Oct. 19, 1934

Fig. 1.

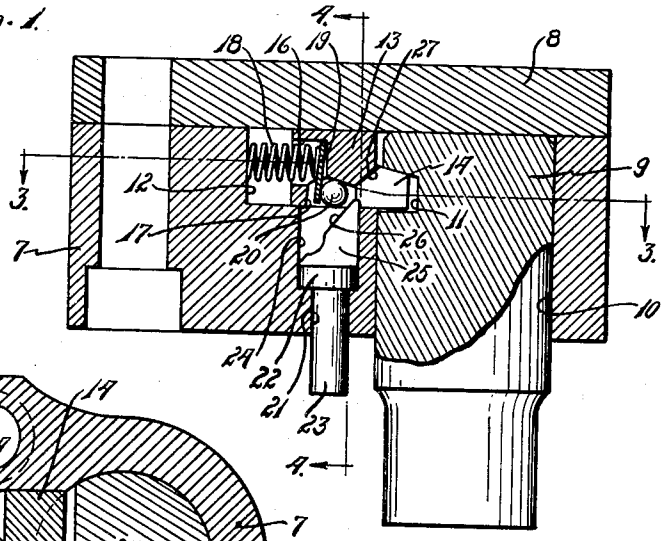


Fig. 3.

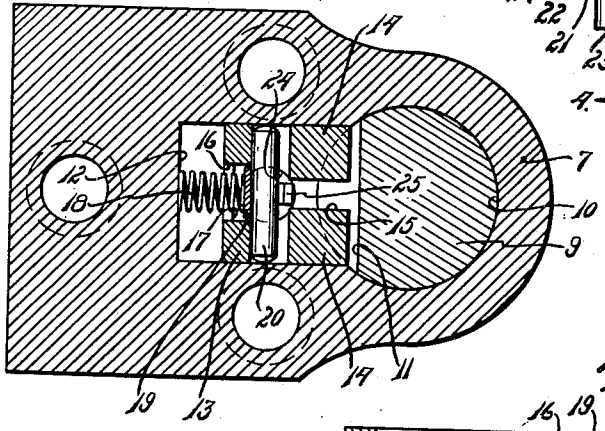


Fig. 2.

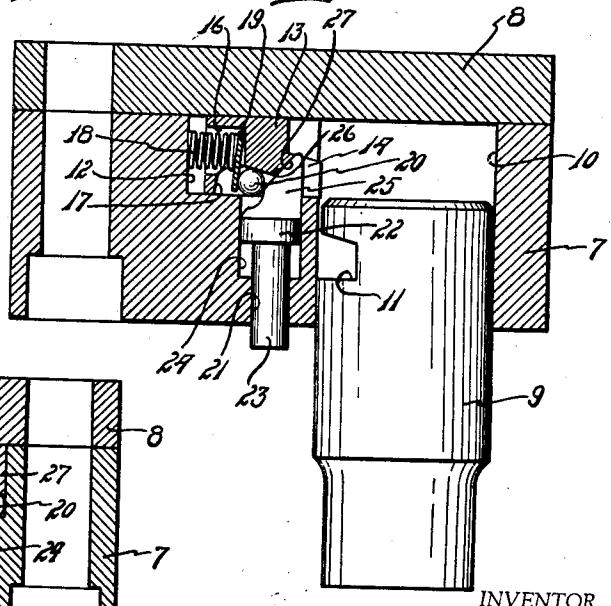
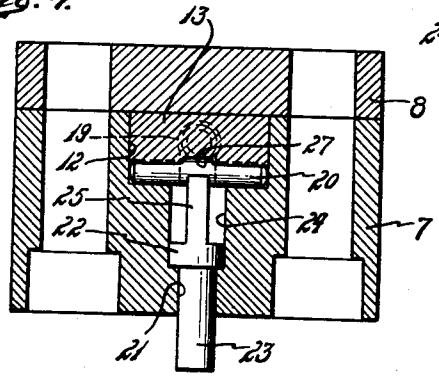


Fig. 4.



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PUNCH HOLDER

W. Reuen Fisher, Frankenmuth, Mich.

Application October 19, 1934, Serial No. 749,041
Renewed March 3, 1939

2 Claims. (Cl. 279—76)

My invention relates to a new and useful improvement in a tool retainer and is particularly adapted for retaining punches, dies, drills, reamers, and similar tools in position on the holder on which they are used.

An object of the present invention is the provision of a tool retainer whereby a tool may be securely held in position in a holder and prevented from longitudinal and rotative movement while positioned therein, while at the same time the tool may be easily and quickly released from position in the holder or placed in position therein.

Another object of the invention is the provision of a tool retainer in which a latching member may be used for latching the tool in position in the holder and which may be moved to inoperative position by a slight pressure on an accessible member.

Another object of the invention is the provision in a tool retainer of this class of a latching member which may be held in inoperative position while the tool is being placed in the holder and which when released will move to operative position so as to engage the tool.

Another object of the invention is the provision of a device of this class which will be simple in structure, economical of manufacture, durable, and highly efficient in use.

Another object of the invention is the provision of a device of this class which will be compact and in which a minimum number of parts may be used.

Other objects will appear hereinafter.

The invention consists in the combination and arrangement of parts hereinafter described and claimed.

The invention will be best understood by a reference to the accompanying drawing which forms a part of the specification and in which,

Fig. 1 is a central sectional view of the invention showing it applied to a punch.

Fig. 2 is a view similar to Fig. 1 showing the retainer moved to inoperative position.

Fig. 3 is a sectional view taken on line 3—3 of Fig. 1.

Fig. 4 is a sectional view taken on line 4—4 of Fig. 1.

In the drawing I have shown the invention illustrated with a tool holder 7 secured to which is a backing plate 8 which will serve to engage the end of the tool and resist the thrust. In the drawing I have illustrated a punch 9 mounted in the tool receiving opening 10 formed in the holder 7. This punch 9 is provided on one side adjacent one end with a peripheral groove or notch 11. The holder is also provided with a recess 12 in which is slidably mounted a latch block 13 having a latch nose 14 projected outwardly therefrom and provided at its center with a slot 15. In the rear face of the block 13 there is formed a recess 16 opening into the recess 17 formed in its under surface. One end of a spring 18 engages in the recess 16 and the other end engages the block 7. A washer 19 serves as a bearing plate for the spring 18 and extends downwardly into the recess 17. Positioned in this recess 17 is a roller 20. Slidably mounted in the recess 24 formed in the block 7 is a head 22 having the stem 23 projecting outwardly from the block 7 through the passage 21. A releasing plate 25 extends upwardly from the head 22 and is in alignment with the slot 15. In operation when the stem 23 is thrust upwardly, the beveled surface 26 of the plate 25 would engage the roller 20 and roll it rearwardly until the washer is forced rearwardly at its lower end in the recess 17 and an upward thrust on the stem 23 will effect a sliding movement rearwardly of the block 13 until the beveled surface 26 engages the surface 27. Further upward movement will move the block 13 further rearwardly so as to disengage the latch nose 14 from the groove or notch 11 formed in the tool 9. When moved to this position, as shown in Fig. 2, the tool may be easily withdrawn or inserted and upon a release of the upward pressure on the stem 23 the spring 18 will force the block 13 into operative or latching position and the head 22 will be forced downwardly into the position shown in Fig. 1.

It is evident that when the parts are moved to the position shown in Fig. 2 and a tool such as described inserted therein, the tool may be rotated until the notch or groove 11 registers with the latch nose whereupon further rotation of the same will be prevented by engagement of the latch nose in the recess and longitudinal movement of the tool will be prevented.

Thus I have provided a simple and effective means for locking a tool in a retainer, while at the same time it may be easily and quickly released.

While I have illustrated and described the preferred form of construction I do not wish to limit myself to the precise details of structure shown but desire to avail myself of such variations and modifications as may come within the scope of the appended claims.

Having thus described my invention what I

claim as new and desire to secure by Letters Patent is:

1. A device of the class described comprising a tool holder having an opening formed therein for the reception of a tool; a latch member slidably mounted on said holder and projectible, at one end, into said opening; resilient means for normally maintaining said member projected into said opening, said latch member having a beveled surface adjacent its forward end; an actuating member slidably mounted on said holder and movable axially of said opening and engaging said surface for effecting a retracting of said latch member; and a curvilinear member engageable with said actuating member, prior to engagement of the same with the said beveled surface, for effecting a partial retraction of said latch member.

2. A device of the class described comprising a tool holder having a tool receiving opening formed therein; a latch member slidably mounted on said holder; a portion on said member adapted, upon movement of said latch member into a predetermined position, for projecting into said opening, said portion having a slot formed therein intermediate its ends; a spring for normally moving said member into said pre-determined position and tending to resist its retraction therefrom, the forward side of said member, at the rear of said slot, having an inclined surface; a roller positioned below and engageable with said member; a retracting member having a tapered portion at its upper end and slidable of said holder axially of said opening and engageable on an inclined surface with said roller for forcing said member rearwardly and, subsequently to a movement of said member, for engaging said inclined surface and effecting a withdrawal of said portion from said opening.

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