Nov. 16, 1948. F. W. RALLISON 2,453,936

TOOL HOLDER FOR ARTIFICIAL ARMS

Filed Aug. 22, 1945 2 Sheets-Sheet 1

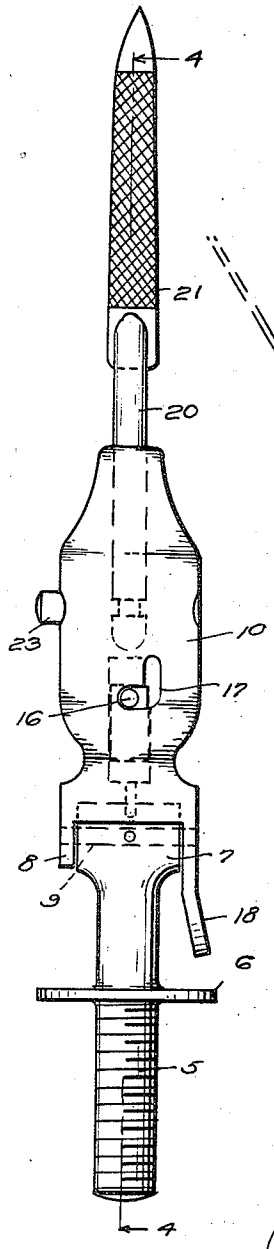


Fig. 1.

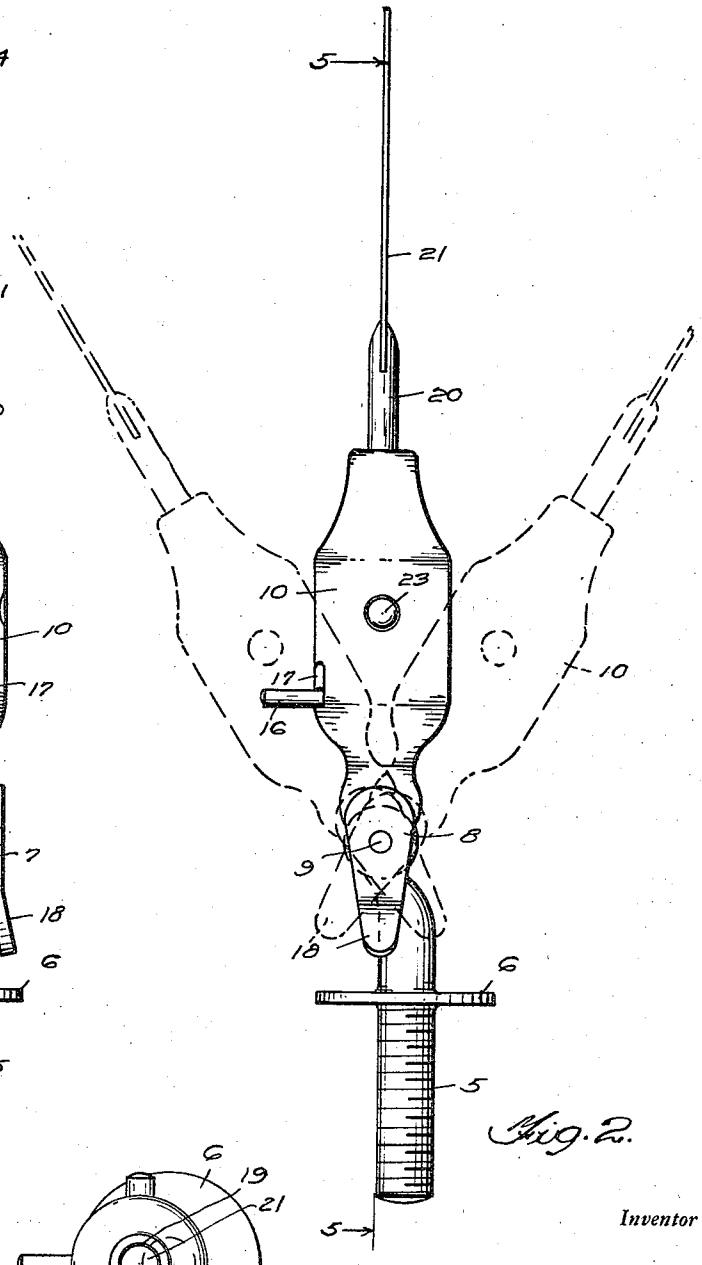


Fig. 2.

Fig. 3.

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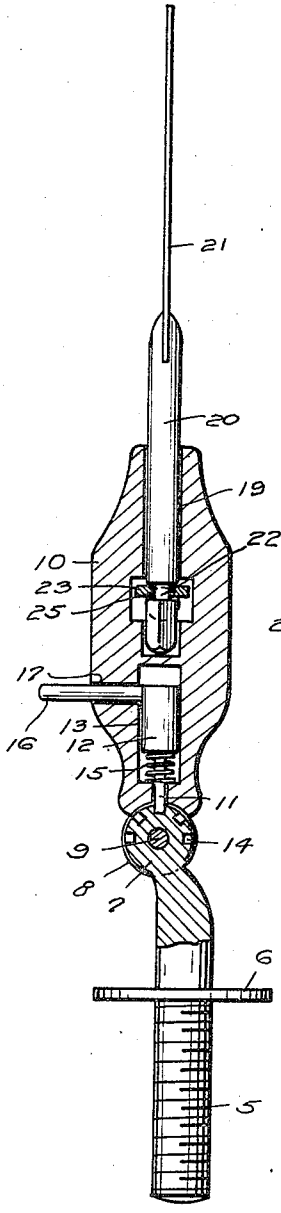


Fig. 4.

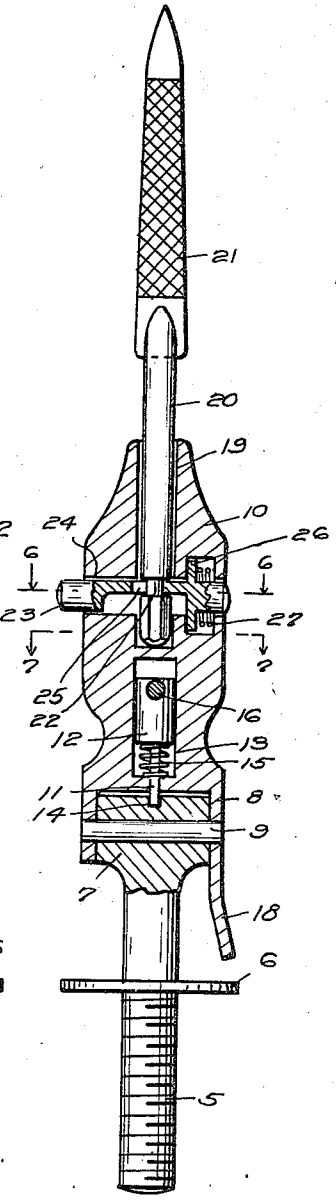


Fig. 5.

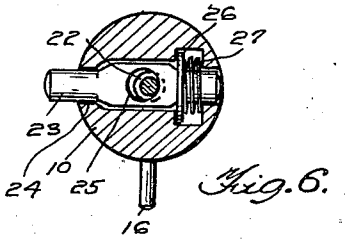


Fig. 6.

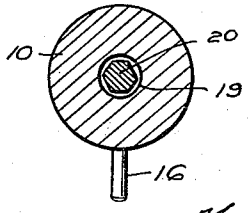


Fig. 7.

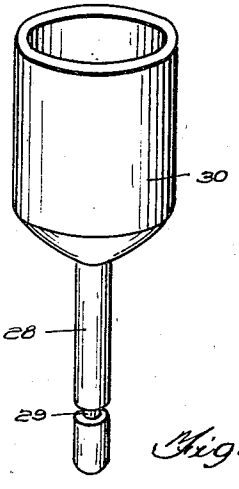


Fig. 8.

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UNITED STATES PATENT OFFICE

2,453,936

TOOLHOLDER FOR ARTIFICIAL ARMS

Frederick W. Rallison, Preston, Idaho

Application August 22, 1945, Serial No. 612,055

1 Claim. (Cl. 279—79)

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The present invention relates to new and useful improvements in artificial arms, and more particularly to a detachable tool holder adapted for attaching at the end of the arm, and by means of which various tools may be supported in a position for use by a person provided with the artificial arm.

An important object of the present invention is to provide a tool holder of this character embodying a swingably mounted socket at the end of the holder, together with means for securing the socket in adjusted position, and also embodying means for detachably securing a tool in the socket.

A further object of the invention is to provide a tool holder of this character of simple and practical construction, which is efficient and reliable in use, relatively inexpensive to manufacture, easy to install in operative position to a conventional form of artificial arm, and which otherwise is well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like reference numerals refer to like parts throughout, and in which:

Figure 1 is a plan view,

Figure 2 is a side elevational view,

Figure 3 is a front elevational view,

Figure 4 is a longitudinal sectional view taken substantially on a line 4—4 of Figure 1,

Figure 5 is a similar view taken substantially on a line 5—5 of Figure 2,

Figures 6 and 7 are transverse sectional views taken, respectively, on the lines 6—6 and 7—7 of Figure 5, and

Figure 8 is a perspective view of an adapter for interchangeable attachment in the socket of the tool holder.

Referring now to the drawings in detail, wherein, for the purpose of illustration, I have disclosed a preferred embodiment of the invention, the numeral 5 designates a threaded stem adapted for threaded engagement in the end of an artificial arm of conventional construction, the stem having a flange 6 formed thereon to abut the end of the arm.

The outer end of the stem 5, beyond the flange 6, is formed with a transversely extending, cylindrical head 7 rotatably mounted in a yoke 8 by means of a pin 9, the yoke being formed at the inner end of an elongated tool socket 10.

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The socket 10 is swingably mounted on the head 7 by means of the pin 9 and is secured in adjusted positions by means of a detent 11 formed on the inner end of a plunger 12 slidably mounted in a chamber 13 in the socket, the detent being adapted to enter circumferentially spaced recesses 14 formed in the head 7.

A coil spring 15 is positioned at the inner end of the chamber 13 and engages the plunger 12 to retract the detent 11, and the plunger and detent are manually moved into their projected positions for entering one of the recesses 14 by means of a laterally projecting handle 16 carried by the plunger and working in a bayonet slot 17 formed in the socket 10, the handle 16 being engaged in the inner end of the slot 17 to secure the detent in locking engagement with the head 7 to thus secure the socket 10 in its angularly adjusted position with respect to the stem 5.

One side of the yoke 8 is formed with a manipulating extension or lever 18, by means of which the socket 10 may be swung into a desired angular position, as shown by the dotted lines in Figure 2 of the drawing, upon releasing of the detent 11.

The outer end of the socket 10 is formed with a bore 19 adapted to receive the stem 20 of a tool 21 such as a file or other implement, the inner end of the stem 20 being hexagonal in cross-section and having an annular groove 22 formed therein.

A locking plunger 23 is slidably mounted in a transversely extending opening 24 in the socket 10 which intersects the bore 19, the plunger 24 having an opening 25 therein for receiving the stem 20.

The inner end of the plunger 23 is formed with a flange 26 against which a coil spring 27 is engaged to urge the plunger 23 outwardly at one side of the socket 10, whereby to cause one edge of the opening 25 in the plunger to enter the groove 22 of the stem 20, and thus secure the tool in position in the socket.

The outer end of the plunger 23 projects beyond the side of the socket 10 whereby a depressing force exerted on the plunger against the tension of the spring 27 will release the edge of the opening 25 from the groove 22 and permit removal of the tool for interchangeably mounting other types of tools therein, such as a tool adapted illustrated in Figure 8 of the drawing and including a stem 28 having an annular groove 29 therein for engagement by the plunger 23, the stem 28 having an enlarged socket 30 at its outer end for frictionally receiving the handles of various types of tools.

It is believed the details of construction, manner of operation, and advantages of the device will be readily understood from the foregoing without further detailed explanation.

In view of the foregoing description taken in conjunction with the accompanying drawings, it is believed that a clear understanding of the construction, operation and advantages of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though I have herein shown and described a preferred embodiment of my invention that the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and the scope of the appended claim.

Having thus described the invention, what is claimed as new is:

A tool holder for artificial arms comprising a threaded stem adapted for threading in an artificial arm, a rounded head on the outer end of the stem having a plurality of recesses, a tool socket including a yoke pivotally receiving the head of the stem, a detent slidably mounted in the socket and engaged in said recesses to secure the socket in pivotally adjusted position, said socket including a bore adapted for receiving a tool shank provided with an annular groove, and a transverse locking pin carried by the socket and engaged in said groove to releasably secure the tool in the socket.

FREDERICK W. RALLISON.

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