No. 637,735. Patented Nov. 21, 1899.

W. H. C. HARRISON.

TOOL HOLDER.

(Application filed Jan. 23, 1899.)

(No Model.) 2 Sheets—Sheet 1.

FIG. 4.

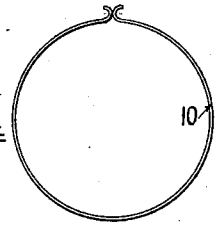


FIG. 1.

FIG. 5.

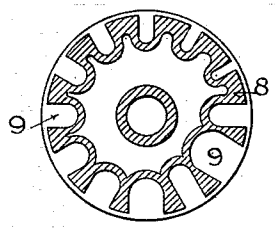


FIG. 3.

FIG. 2.

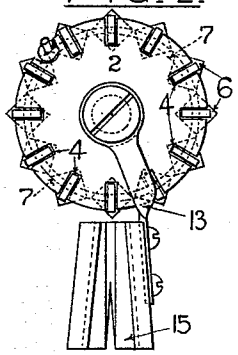


FIG. 6.

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(No Model.) 2 Sheets—Sheet 2.

FIG. 7.

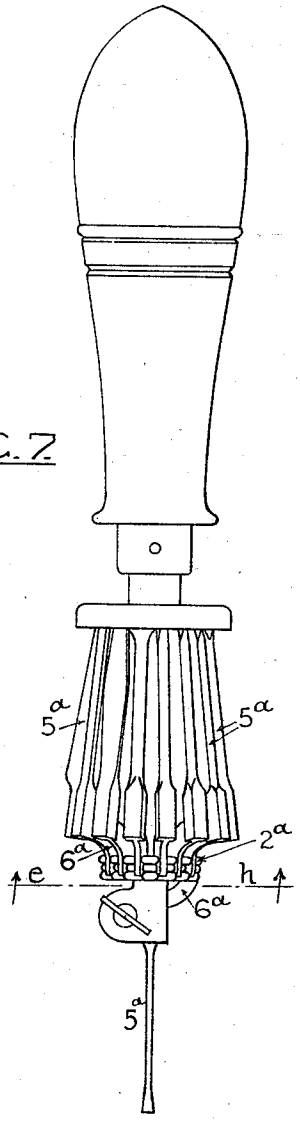


FIG. 8.

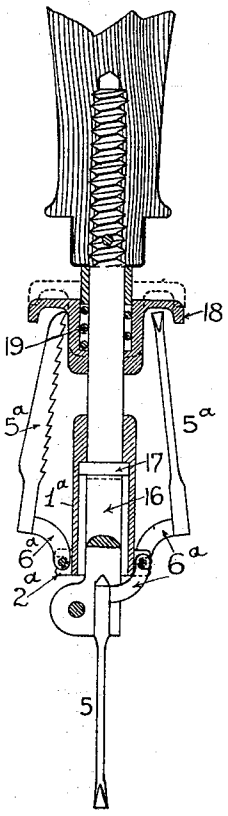


FIG. 10.

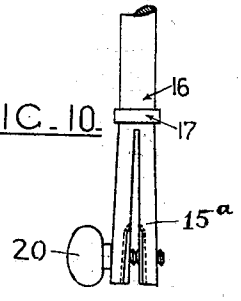
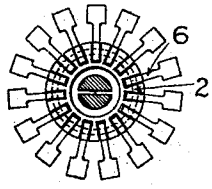


FIG. 9.



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UNITED STATES PATENT OFFICE.

WILLIAM HENRY CRAINE HARRISON, OF WOODVILLE, SOUTH AUSTRALIA.

TOOL-HOLDER.

SPECIFICATION forming part of Letters Patent No. 637,735, dated November 21, 1899.

Application filed January 23, 1899. Serial No. 703,090. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HENRY CRAINE HARRISON, a subject of the Queen of Great Britain and Ireland, and a resident of Torrens road, Woodville, in the Province of South Australia, have invented a certain new and useful Tool-Holder, of which the following is a specification.

This invention relates to means for attaching and carrying a set of independent tools, commonly called "bits," upon a brace or handpiece provided with a socket to take the independent tools, so that the tools cannot be mislaid, and when required any one of them may be quickly secured in the socket of the brace or handpiece ready for use.

In carrying out the invention I mount upon or attach to the brace or common handpiece a rotatable sleeve, to which the tools are hinged or attached at their tang end, so that when required to be used each tool may be turned on its hinge and quickly affixed in the socket and when done with may be removed from the socket and turned back on its hinge to lie along the sleeve without being detached from the sleeve.

In order that my invention may be clearly understood, I will describe the same with reference to the accompanying drawings, in which—

Figure 1 is a side view of my invention applied to a carpenter's hand-brace. Fig. 2 is a view of the tang end of the sleeve and the split socket. Fig. 3 is a central sectional view of the lower part of Fig. 1. Fig. 4 is an end view of the split spring-ring which encircles the points of the tools. Fig. 5 is a section of the sleeve on line *a b* of Fig. 1. Fig. 6 is a section of the sleeve on line *c d* of Fig. 1. Fig. 7 is a side view of my invention applied to a simple handpiece. Fig. 8 is a central section of portion of the same, showing in dotted lines the raised position of the sliding cap. Fig. 9 is a section from beneath on the line *e h* of Fig. 7. Fig. 10 represents the lower end of the stem, showing the tool-socket.

I will first describe Figs. 1 to 6. In this arrangement the tools are hinged to a sleeve 1, which in turn is mounted upon a spindle 12, so as to be freely rotatable thereon, the spindle being firmly secured to the brace. The brace is similar to that in common use so far as general shape is concerned, but the distance between the upper and lower parts of the handle-crank is increased sufficiently to provide space for the tool-carrying sleeve. The form of tool-socket 15 is also in common use, consisting, essentially, of a split boss having a tapered grip to take the tang 6 of the tool 5 and adapted to be tightened thereon by a thumb-screw, whereby the two parts of the split boss are drawn together. The sleeve 1 has at the end adjacent to the tool-socket 15 a projecting ring 2, with a groove 3 extending around its circumference and a number of radial slots 4 across its outer portion and across the said groove corresponding to the number of tools 5 to be attached. These slots divide the projecting ring into a number of cheeks, between which the tools are secured. Each tool has its tang 6 extended somewhat beyond the usual length and flattened out to the form of an eye or hook, which fits between two of the said cheeks and is secured in place by a wire 7, passing through the eye or hook and lying in the circumferential groove 3. The wire forms a hinge upon which the tool may be turned, as desired, either for affixing in the socket of the brace for work or for returning to its place along the sleeve when done with. At the other end of the sleeve is another projecting ring 8, having a series of recesses 9, corresponding in number and position to the radial slots 4 in the ring 2 and of various sizes and shapes to receive the points of the tools 5, as shown more particularly in Fig. 5. In order to retain the points of the tools in position in these recesses, I provide a split spring ring or clip 10, which fits neatly upon the ring 8 and may be rotated thereon. By disconnecting the wire 7 any tool can be detached either for removal or for replacement by one of the same or another kind. The sleeve 1 is mounted so as to be capable of rotation upon a spindle 12, one end of which is screwed into the handle of the brace and the other end is supported by a stay 13, secured to the tool-socket 15. When one of the tools is to be used, the split spring-ring 10 is turned on the ring 8 until the point of the tool required is adjacent to the aperture in the ring 10. The tool is then pulled out, the tang turning on the wire 7, and the sleeve 1 is rotated on the

spindle 12 until the tool is immediately in front of and adjacent to the slot in the face of the socket 15. It is then turned into place through the slit in the front part of the socket and secured by closing up the two parts in the usual way. In order to allow the tang of the tool to be turned into the socket from the front, the two parts of the socket are set to spring apart the necessary distance, and the slit in the front of the socket is made wider than hitherto.

Referring now to Figs. 7 to 10, in this arrangement the tools 5^a are hinged to a sleeve 1^a, which in turn is mounted upon a stem 16, so as to be freely rotatable thereon. Each of the tools 5^a has at its tang end an extension or wing 6^a, having an eye or hook which is secured by a wire 7^a between the cheeks of a projecting ring 2^a on the bottom of the sleeve, as in the arrangement previously described. The stem 16 is split at its lower portion and formed with a socket 15^a with yielding walls, the socket to receive the shanks of the tools, and the lower end of the sleeve 1^a is made large enough to allow slight movement of the two parts of the stem. A collar 17 is provided on the stem to retain the sleeve at the right height above the socket 15^a. The socket has a thumb-screw 20, by which the walls of the socket may be moved together to clamp the tools. The points of the tools when lying alongside the sleeve are engaged by a loose cap 18, slidable upon the stem 16 and provided with a spring 19, which tends to keep the cap upon the point of the tools. When it is desired to use any one of the tools, the cap 18 is raised to the position shown in dotted lines in Fig. 8, when the tool required may be turned down upon its hinge to the socket. The cap 18 on being released is moved to its bottom position and secures the points of the other tools in place.

I have described the two arrangements which I prefer to employ; but I desire it to be understood that I do not confine myself thereto, as other forms of sleeve and hinge connections for the tang end of the tools and other forms of cap for the points of the tools may be employed; but,

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. The combination with a tool-driving instrument having a socket to receive the tools when the same are to be driven, of a sleeve mounted to turn on said instrument, and a plurality of tools pivoted to and turning with the sleeve and capable each of swinging from a position alongside the sleeve to a position within the socket.

2. The combination, with a tool-driving instrument having means to receive and hold a tool when the tool is to be driven, of a tool-holder mounted to turn on the instrument, and a plurality of tools pivoted to said holder, to turn therewith and capable each of swinging from a position alongside the holder to a position within the said means for holding the tools when they are to be driven.

3. The combination with a brace for driving tools, the brace having a socket for receiving the tools when they are to be driven, of a sleeve mounted to turn on the brace, and a plurality of tools permanently pivoted to the sleeve and capable of swinging from a position alongside of the sleeve to a position within the socket.

4. The combination, with a tool-driving instrument having a socket for receiving the tools when they are to be driven, the socket being open at one side so that the tools may be moved sidewise thereinto, of a tool-holder mounted to turn on the instrument, and a number of tools pivoted on the holder and normally carried alongside thereof, the tools being capable of swinging through the said open side of the socket and into the same, to hold the tool in operative position.

5. The combination with a tool-driving instrument having a socket for receiving the tools, the socket being open at one side so that the tools may be moved sidewise thereinto, of a rotary tool-holder adjustably mounted on the instrument, and a plurality of tools mounted to swing thereon and normally carried alongside of the same, the tools being capable of swinging from the holder into the socket through the opening in the side thereof, whereby to hold the tools in operative position.

6. The combination, with a tool-driving instrument having a socket therein open at one side so that the tools may be moved through the open side into the socket, of a sleeve mounted to turn on the said instrument, and a plurality of tools pivotally mounted on the sleeve and normally lying alongside of the same to turn therewith, the tools being capable of swinging outward from the sleeve and into the socket through the opening in the side thereof, to hold the tools in operative position.

7. The combination with a brace having a socket therein, the socket having an opening in its outer side so that the tools may be moved sidewise into the socket, of a sleeve mounted to turn on an axis at an angle to the socket, one end of the sleeve terminating at the upper end of the socket, and a number of tools pivoted to said end of the sleeve and normally lying alongside of the sleeve to turn therewith, the tools having straight shanks and being capable of swinging outward from the sleeve and into the socket through the open side thereof.

8. The combination with a brace having a tool-socket therein, of a pin secured rigidly on the brace above the socket, a sleeve mounted to turn on the pin, and a number of tools mounted to swing on the sleeve and normally lying alongside of the sleeve to turn there-

with, the tools being capable of swinging outward from the sleeve and into the socket, to hold the tools in operative position.

9. The combination, with a tool-driving instrument having a socket for receiving the tools when they are to be driven, the socket being open at one side so that the tools may be moved sidewise thereinto, of a tool-holder mounted to turn on the instrument and capable of carrying a number of tools so that the tools when pivoted on the holder will be capable of swinging through the said open side of the socket and into the same, to hold the tool in operative position.

In testimony that I claim the foregoing as my invention I have signed my name, in the presence of two witnesses, this 16th day of December, 1898.

WILLIAM HENRY CRAINE HARRISON.

Witnesses:

ARTHUR GORE COLLISON,

WILLIAM SPEAKMAN HANSON.