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W. F. BARRY

1,934,962

SURGICAL CHISEL HOLDING AND DRIVING IMPLEMENT

Filed March 23, 1932

FIG. 1.

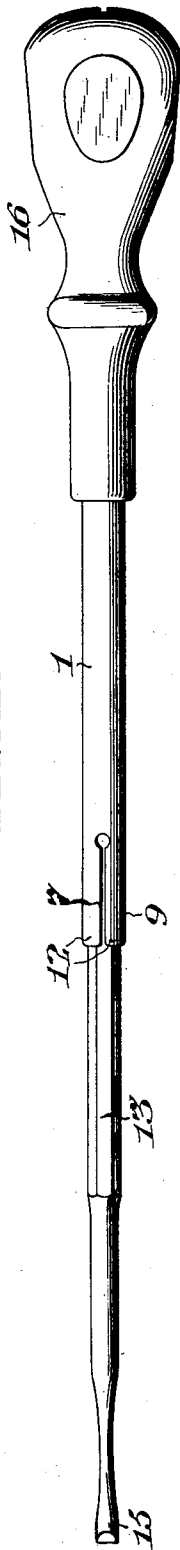


FIG. 2.

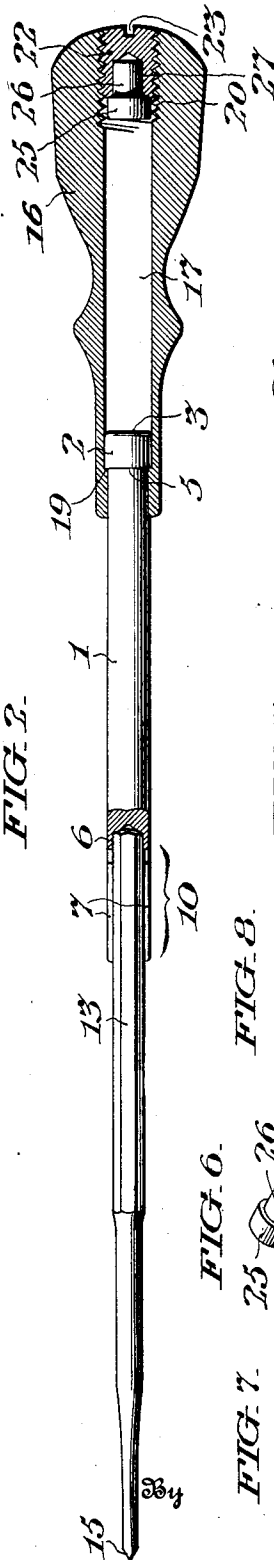


FIG. 3.

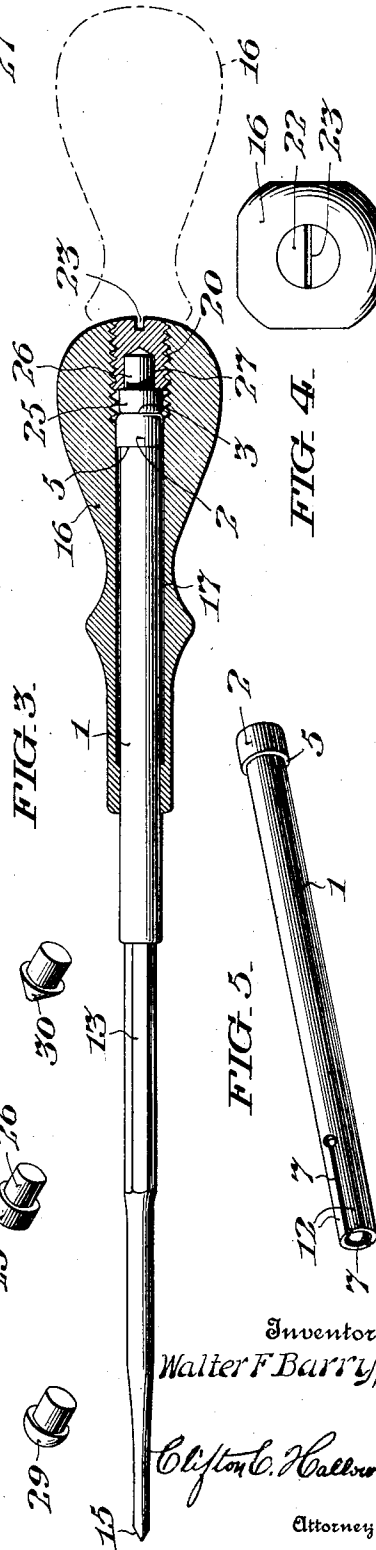


FIG. 4.

FIG. 5.

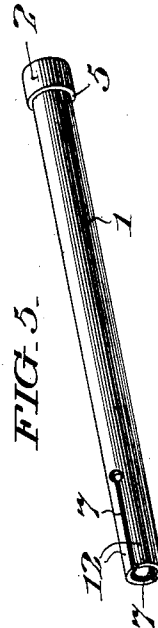


FIG. 6.

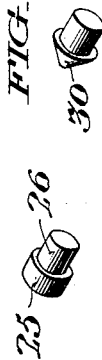


FIG. 7.



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UNITED STATES PATENT OFFICE

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SURGICAL CHISEL HOLDING AND DRIVING
IMPLEMENTWalter F. Barry, Newark, N. J., assignor to The
S. S. White Dental Manufacturing Company, a
corporation of Pennsylvania

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2 Claims. (Cl. 128—312)

My invention relates particularly to devices for excising bone in dental operations and otherwise operating upon bone structure wherein it is necessary to apply an intermittent force such as hammer blows, and is especially directed to that class of devices in which different tool forms may be readily engaged and replaced.

The principal objects of my invention are to provide an implement for holding and driving surgical chisels or operating tools with a guided reciprocatory driving member serving as a mallet handle whereby intermittent hammer blows of substantially uniform character conveniently controlled by the operator may be imparted to such chisel or tool in a highly effective and controllable manner.

Other objects of my invention are to provide such a tool-holding implement with means for so cushioning the driving mallet members as to absorb the shock and jar incident to the concussion between the tool-holder and mallet members and thereby minimize, so far as possible, any discomfort to the patient being operated upon, and consequent annoyance to the operator.

Further objects of my invention are to provide a tool-holding and driving implement of the type contemplated with means for adjusting, removing and replacing the shock absorbing buffers, or the substitution of such buffers of differing size, form or resiliency to suit the particular characteristics of the case or the individual requirements of the operator.

Specifically stated, the form of my invention as hereinafter described comprises a cylindrical stem having at one end a head serving as an anvil, and at the other end a chuck arranged to receive the shank of a chisel or tool, and having mounted thereon for axial reciprocatory movement a weighted handle serving as a mallet and having removable and replaceable resilient anvil engaging mallet buffers.

My invention also includes all of the various novel features of construction and arrangement as hereinafter more definitely specified.

In the accompanying drawing, Figure 1 is a side elevational view of a tool-holding implement constructed in accordance with my invention and having a bone chisel mounted therein, the weighted mallet handle being distended and in position to be thrust forward to effect the desired chisel driving blow; Fig. 2 is a fragmentary longitudinal sectional elevation of the implement shown in Fig. 1; Fig. 3 is a longitudinal sectional elevation of the implement shown in Figs. 1 and 2, but showing the weighted mallet handle in its

forward position, having been thrust forward to engage its mallet buffer with the anvil; Fig. 4 is an end view of the implement as viewed from the right hand end thereof; Fig. 5 is a perspective view of the stem upon which the mallet handle reciprocates, and which is provided with the chuck and anvil; Fig. 6 is a perspective view of the mallet buffer having a cylindrical head as shown in Figs. 2 and 3; Fig. 7 is a perspective view of a mallet buffer having a semi-spherical head; and Fig. 8 is a perspective view of a mallet buffer having a conical head.

In said figures, the implement comprises the stem 1 having the enlarged head 2 providing the anvil surface 3 and the shoulder 5 at its inner end, and having at its outer end the socket 6 having the slits 7 in its annular wall 9 and forming the spring chuck 10 provided with the shank holding fingers 12.

Said chuck is arranged to receive and frictionally engage the inner end of the shank 13 of the chisel 15, or other form of tool as may be employed, and may be operatively engaged with said chuck by merely thrusting said shank therein and similarly withdrawn from engagement therewith, so that replacement may be readily and quickly effected.

The stem 1, which may preferably be cylindrical as illustrated, affords a slide bar upon which the weighted handle 16, having the bore 17 and serving as a mallet, may be manually reciprocated to intermittently produce concussive blows on said stem 1 and thereby effectively drive the chisel 15 forward.

Said handle 16, as shown in longitudinal section in Figs. 2 and 3, is provided near the forward end of its bore 17 with the shoulder 19 co-operative with the shoulder 5 on the anvil head 2 to limit the rearward reciprocatory movement of the handle, and said bore 17 is provided with the screw threads 20 with which the mallet plug 22, having the screw-driver slot 23, is adjustably engaged and may be effective to vary the reciprocatory stroke or throw of said handle on said stem 1, if desired, plugs of varying lengths may be interchangeably substituted.

It is highly desirable in an implement of the type contemplated to so absorb concussive shock, due to the successive hammer blows, as to minimize the discomfort to the patient being operated upon, and therefore, the mallet plug 22 is provided with the mallet buffer 25 of suitable resilient or yielding material which strikes the anvil surface 3 in the forward thrust of the handle 16,

and which has its stem 26 engaged in a suitably provided socket 27 in the mallet plug 22.

It will be obvious from the foregoing that the mallet plug 22, which is shown as carrying the
5 cylindrical drum type buffer head, may with equal facility be provided with other forms of buffers, as, for instance, the buffer shown in Fig. 7, having the semi-spherical head 29, or the buffer shown in Fig. 8, having the conical head 30.

10 My invention is advantageous in that the mallet forming a part of the implement and guided in its movement on the tool-holding stem relieves the operator from the distracting action of properly striking the head of the tool by a
15 hand mallet as heretofore employed, and thereby permitting the operator to direct his entire attention and skill upon the object being operated upon.

I do not desire to limit my invention to the
20 precise details of construction and arrangement as herein set forth, as it is obvious that various modifications may be made therein without departing from the essential features of my invention as defined in the appended claims.

25 Having thus described my invention, I claim:

1. A surgical implement comprising a tool holder having a socket at its outer end and an enlarged headed anvil at its inner end, a tool having its shank engaged in said socket, a handle
30 having a bore in which said anvil is arranged to

relatively reciprocate and provided with a shoulder against which said anvil engages to limit the outer movement of said handle, and a plug threadedly engaged in the open end of said bore and provided with a mallet buffer of yielding material arranged to engage said anvil when said
80 handle is thrust forwardly, said handle serving as a mallet for operatively driving the tool holder and its tool forward, and the yielding buffer tending to absorb the shock.

2. A surgical implement comprising a tool holder having an enlarged headed anvil forming a shoulder at its inner end and a tool-holding means at its outer end, a tool having its shank engaged therewith, a handle having a bore in which said tool holder reciprocates and provided with a shoulder arranged to engage the shoulder on said headed anvil to limit the outer movement of said handle, a plug in the open end of said bore provided with a socket, and a headed
95 buffer formed of resilient material having a stem engaged in the socket in said plug and serving as a mallet buffer arranged to strike the headed anvil of said tool holder when said handle is thrust forwardly, whereby the tool holder and
100 its tool is given a forward stroke by the inertia of said handle upon each forward reciprocation thereof.

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