

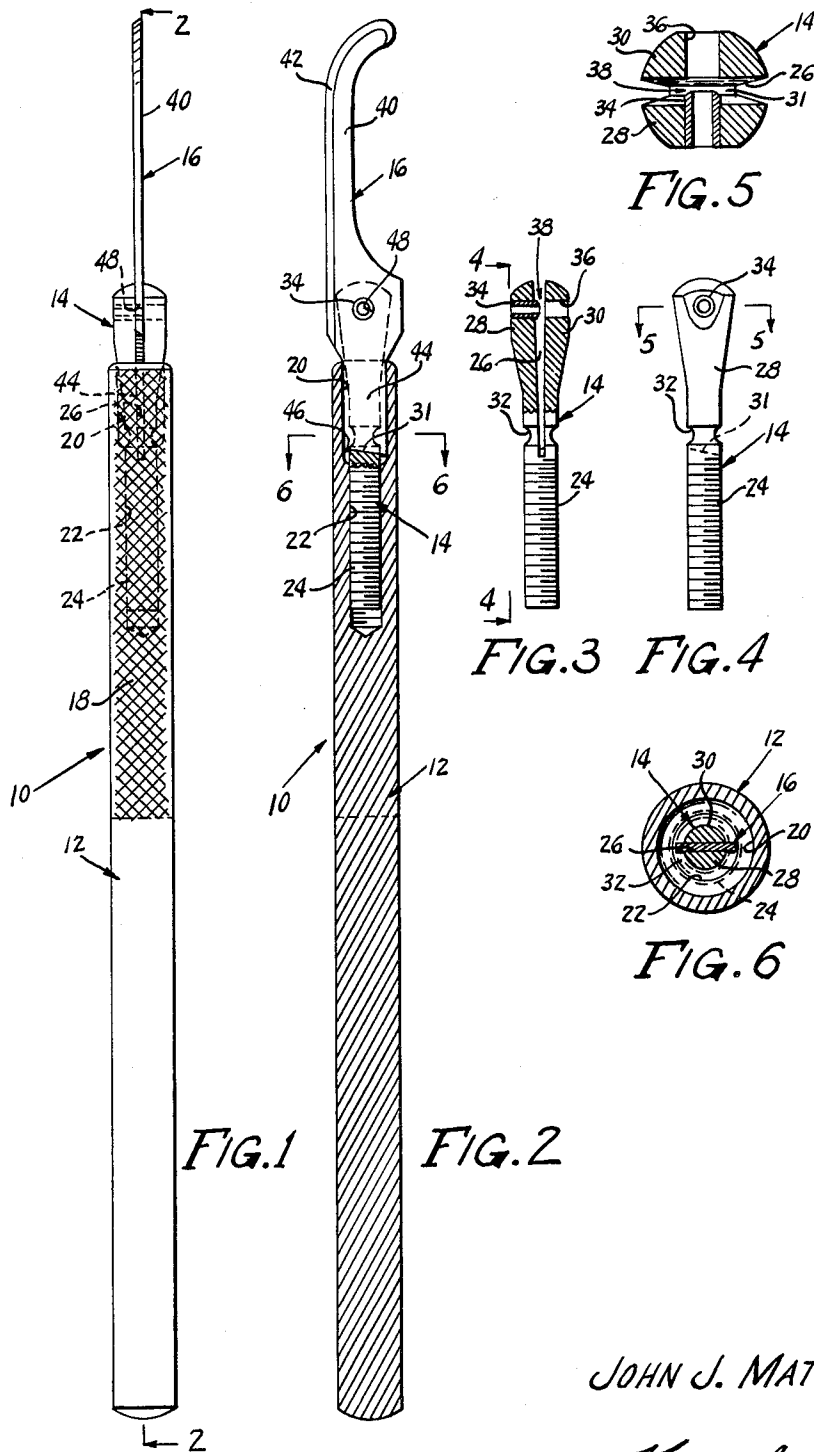
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BLADE HOLDER

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BLADE HOLDER

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5 Claims. (Cl. 30—338)

This invention relates to a blade holder, more particularly a scalpel blade holder, but not necessarily restricted thereto.

In surgery, podiatry, and in many other fields, there is need for a strong, durable, re-usable blade holder, one in which the blade will be firmly held, while at the same time, when desired, the blade can be readily removed and replaced, without need of any special tools or implements and without danger of injury to the user. The present invention accomplishes these objects and more.

In many instances, the holder must be of the type that can be completely sterilized, without recourse to scrubbing to reach inaccessible corners or crevices which might hold or hide germs. The present invention fully provides all said desirable objects.

Further objects and advantages will become apparent from the following description.

It is to be understood that the invention is not limited by the present description and encompasses all constructions within the limits of the appended claims.

In the accompanying drawings:

FIGURE 1 is an enlarged side elevational view of an assembled blade holder in accordance with the instant invention, showing a scalpel blade operatively secured therein;

FIGURE 2 is a transverse cross-sectional view taken substantially on line 2—2 of FIGURE 1, with parts broken away for illustrative clarity;

FIGURE 3 is a side elevational view of the clamping element, partly in section;

FIGURE 4 is an elevational view of the clamping element looking substantially in the direction of the arrows 4—4 in FIGURE 3;

FIGURE 5 is an enlarged transverse cross-sectional view of clamping element taken substantially on line 5—5 of FIGURE 4; and

FIGURE 6 is an enlarged transverse cross-sectional view of the assembled blade holder taken substantially on line 6—6 of FIGURE 2.

Referring now to the drawing, the blade holder of the instant invention is designated generally by the reference numeral 10 and comprises basically a handle element 12 and a clamping element 14 which, in combination, securely hold or support a conventional scalpel or other type blade 16 as will be further described hereinafter.

The handle element 12 is preferably of solid material such as metal, but may also be made of other suitable materials, depending upon the particular application of the blade holder 10, in some instances, of suitable plastics. A portion 18 of the handle element 12 is knurled or roughened to provide the user with a non-slip surface for the fingers to engage. At one end of the handle element 12 a bore 20 is defined in communication with an internally treaded counterbore 22.

The clamping element 14 has an externally threaded shank portion 24 at one end thereof receivable in the counterbore 22, and a longitudinal slot 26 defined in the opposite end to form a bifurcated portion having a pair of tapered leg members 28 and 30. The base of the slot 26 is slanted as at 31 for a purpose to be described further hereinafter. A circumferential groove 32 defines a portion of lesser diameter adjacent the base of the leg members 28 and 30 to render the same resilient and to

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normally spread the upper ends thereof as will be best seen in FIGURES 3 and 5 when the blade holder 10 is disassembled. One of the leg members, 28 for example, has a transverse stud 34 secured thereto and directed inwardly of the slot 26 towards an opening 36 defined in the opposite leg member 30. The opening 36 is dimensioned to receive the stud 34 when the leg members 28 and 30 are pressed towards each other, but the stud 34 is of such a length that its extremity is spaced as at 38 from the opposite leg 30 when the blade holder 10 is disassembled and the leg members 28 and 30 are spread as set forth hereinbefore.

The blade 16 may be of any desired shape or form depending upon its particular utility and is shown in the drawing, for example, as a podiatry blade. The blade 16 conventionally has a blade portion 40 with a cutting edge 42 and an end portion 44 adapted to be received in the slot 26 through the space 38 with its slanted bottom edge 46 in abutting engagement with the slanted base 31 of the slot 16. The blade 16 has an aperture 48 there-through positioned to receive the stud 34 when the blade holder 10 is assembled.

The use and operation of the blade holder of the instant invention will now be apparent. The clamping element 14 is removed from the handle element 12 so that the leg members 28 and 30 are spread as shown in FIGURES 3 and 5 and the end portion 44 of the blade 16 is inserted into the slot 26 through the space 38 between the extremity of the stud 34 on the leg member 28 and the opposite leg member 30 until its slanted bottom edge 46 abuts the slanted base 31 of the slot 16. In this position the aperture 48 is transversely aligned with the stud 34 on the leg member 28 and with the opening 36 in the opposite leg member 30. The clamping element 14 is then assembled with the handle element 12 by threadably securing the shank portion 24 of the former element in the counterbore 22 of the latter element. The bore 20 of the handle element 12 is so dimensioned that as the tapered sides of the leg members 28 and 30 are received therein the leg members are pressed towards each other to engage the stud 34 on the leg member 28 through the aperture 48 in the blade 16 and into locking relationship in the opening 36 in the opposite leg member 30. Disassembly of the blade holder 10 is effected by simply reversing this procedure.

It will now be seen that there is herein provided an improved blade holder which satisfies all of the objectives of the instant invention, and others, including many advantages of great practical utility and commercial importance.

I claim:

1. In a blade holder for a longitudinally extending plate like blade, the latter having an aperture means in a medial portion, a sharpened working end portion and an opposite nonsharpened end, the blade holder including a clamping means assembled in use in an end of a handle,

said clamping means including in exterior configuration a longitudinally extending top portion, therebelow a portion which is of an inverted circular conical shape smoothly merging into a cylindrically shaped portion, and at its base a constant diameter threaded portion,

a longitudinal through-slot means of downwardly decreasing transverse width when said clamping means is disassembled with said handle, said slot extending from the top of the clamping means downward past the conical portion and terminating at the constant diameter threaded portion with a base longitudinally higher at one end than at the other end,

said slot means forming in the clamping means a

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bifurcated upper end and medial portion and including similar left and right resilient leg members, means forming a pair of horizontally aligned openings in the legs adjacent their upper ends, and a stud concentrically fixed in one of the openings of one leg and projecting away from a face of the slot a distance slightly more than the minimum slot width,

the handle possessing a cylindrical top bore means of such diameter as to contact at its top upon assembly a perimeter of the conical portion of the clamping means and of such vertical depth as to accommodate the cylindrical portion and a major part of the conical portion of said clamping means,

and a concentric threaded counterbore means extending downwardly from the bottom of said top bore means a distance somewhat greater than that of the threaded portion of said clamping means which upon assembly is threaded therein,

whereby upon threading the base of the clamping means for its full height into said threaded counterbore, the bifurcated legs are drawn together so as to unify the slot width for its full height and the projecting end of said stud of one leg enters the aligned opening in the other leg.

2. The structure of claim 1 wherein a circumferential concave groove is formed in the clamp means within the vertical extent of the cylindrically shaped portion, to thereby give greater resilience to each leg.

3. In combination, a blade, a clamping means to hold the blade, and a handle means to hold the clamping means,

said blade being longitudinally extending and plate like, having an aperture means in a medial portion, a sharpened working end portion, and an opposite non-sharpened end, which latter end is held within an upper portion of said clamping means,

said clamping means including in exterior configuration a longitudinally extending blade holding top portion, therebelow a portion which is of an inverted circular conical shape smoothly merging into a circularly cylindrical shaped portion, and at its base a constant diameter threaded portion,

a longitudinal through-slot means of downwardly decreasing transverse width when nonassembled with said handle, the minimum width being equal to the approximate thickness of the nonsharpened end of the blade, when in non-assembled relationship with said blade and handle, said slot extending from the top of the clamping means downward past the conical portion and terminating at the constant diameter threaded portion,

said slot means forming in the clamping means a bi-

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furcated upper end and medial portion and including similar left and right resilient leg members between which to hold the nonsharpened end and a portion of the sharpened end of said blade,

means forming a pair of horizontally aligned openings in the legs adjacent their upper ends, and a stud concentrically fixed in one of the openings of one leg and projecting away from a face of the slot a distance slightly more than the thickness of the nonsharpened end of the blade,

the handle possessing a cylindrical top bore means of such diameter as to contact at its top upon assembly a perimeter of the conical portion of the clamping means and of such vertical length as to receive the major extent of the nonsharpened portion of the blade when the latter is in fully assembled relationship with said clamping means and said handle,

and a concentric threaded counterbore means extending downwardly from the bottom of said top bore means a distance slightly greater than that of the threaded base of said clamping means which upon assembly has been screwed therein,

the blade, upon assembly, being inserted in the slot with its aperture encircling said stud, and with its base contacting the base of the slot, and the threaded base of said clamping means being screwed downwardly into said threaded counter bore,

after said assembly, the bifurcated legs are drawn together so that the slot sides contact adjacent sides of the nonsharpened base of said blade, and the projecting end of said stud passes through said blade and into said aligned opening in the other leg to thereby pivot the blade thereabout while the base of said blade contacts the base of said slot.

4. The assembled structure of claim 3 wherein the bottom surface of the unsharpened portion of the blade is oblique to its vertical longitudinal axis, and the base of said slot is similarly slanted from both the horizontal and the vertical.

5. The structure of claim 4 wherein a circumferential groove is formed in the clamping means within the vertical extent of the cylindrical portion to thus give greater resilience to each leg.

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