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2,482,385

BLADE HOLDER

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Fig. 1

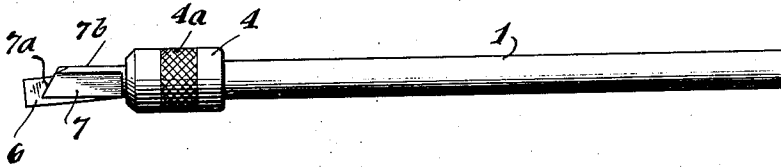


Fig. 2

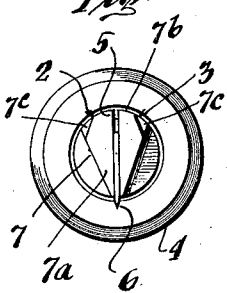


Fig. 3

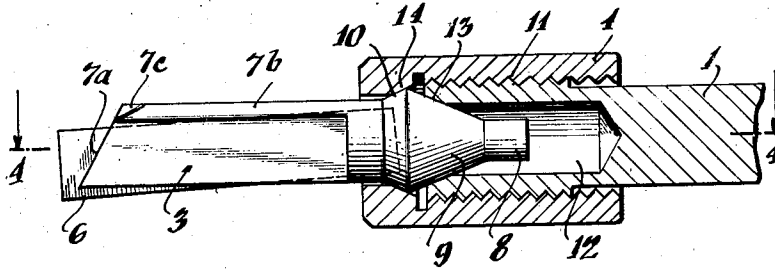


Fig. 4

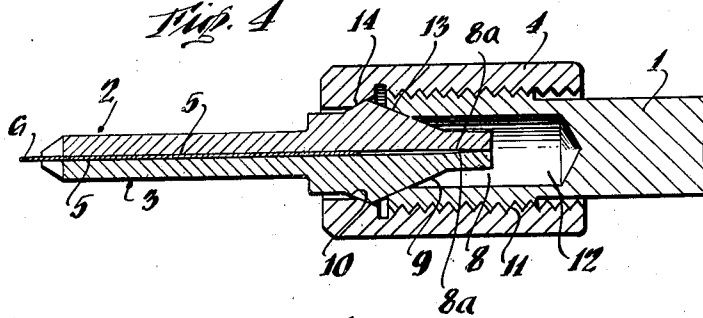
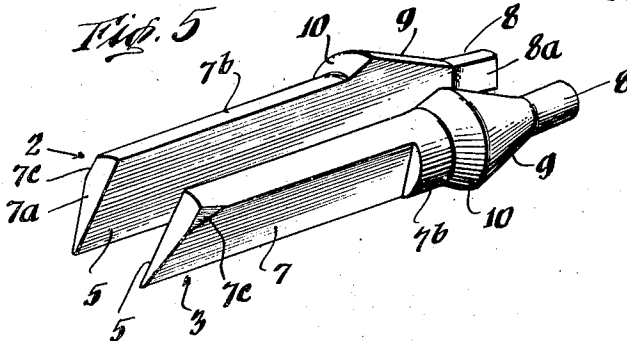


Fig. 5



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UNITED STATES PATENT OFFICE

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BLADE HOLDER

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2 Claims. (Cl. 279—56)

1

This invention relates to a blade holder and, more particularly, to a blade holder adapted as a scalpel for medical practice.

The principal object of the invention is a blade holder suited to hold irregular shapes and gauges of blades. A further object is a blade holder of the kind referred to which is simple in construction and consists of a minimum number of parts and, this notwithstanding, permits a ready attachment and detachment of the blade and a firm and steady relative securement of the parts, such as is required during surgical operations. Other objects will be manifest or will be apparent from the following description of the invention.

The description will now be made with reference to the accompanying drawings, of which

Fig. 1 is a side elevation of the holder with a blade secured in it;

Fig. 2 is a front view of the holder;

Fig. 3 is a fragmentary side view, partly in longitudinal section;

Fig. 4 is likewise a fragmentary longitudinal section, but offset by 90° in relation to Fig. 3, as indicated by line 4—4 of Fig. 3;

Fig. 5 is a separate view of the clamping element when in open position.

The principal parts of the holder according to my invention are the handle 1, the blade holding jaws 2 and 3, and the ferrule 4. The jaws are formed with forwardly projecting gripping portions having interior flat clamping faces 5 adapted to hold between them the blade 6. Exteriously, the two jaws are exactly complementary and any reference to the form of the holding member should be understood to apply to the composite whole made up from the two jaws.

As appears best from Fig. 5, the holding member has a rounded circumference 7b which, however, is flattened laterally over most of its length, thereby forming offset downwardly converging wall portions 7. The front end of the holding member is likewise flattened and is slanted, as indicated at 7a, the slant receding towards the top part of the member. The upper two corners may be chamfered as shown at 7c. The holding member has body portions which extend into a circular guide stud 8, constituted by two slightly inwardly converging portions, as indicated at 8a. At the body portions immediately ahead of the guide stud the holding member is provided with inclined surfaces 9 and 10. It will be noted that the surface 9 is of considerably greater length than the surface 10 and that both surfaces are disposed at a relative angle. Surface 9, therefore, is sloped toward the rear, while surface 10 faces the front end of the holding member.

The handle 1 has an exterior thread which coacts with an interior threading of the ferrule 4. The threading has been indicated by the reference character 11. The handle also is provided

2

with an internal socket 12 at its one end. The arrangement is so that the socket substantially extends within the area embraced by the outside threading. The socket is gradually enlarged at its outer end whereby an inwardly beveled wall portion 13 is formed. The ferrule 4 is likewise provided with an internal beveled wall 14 which latter directly connects with the thread portion. The angle and direction of the incline of the socket wall portion 13 correspond to the inclined surface 9 of the blade holding member and a similar correspondence exists between the beveled wall 14 of the sleeve and the surface 10 of the holding member. It will be understood that in this manner two sets of inclined surfaces are formed, each set consisting of opposed wall portions of a corresponding inclination.

The manipulation of the device is as follows: the clamping jaws with the blade inserted between them are loosely introduced into the socket of the handle. The ferrule is then placed over the jaws and by gripping the knurled portion 4a is screwed onto the handle end. The opposing inclined wall portions of both sets are thereby forced against each other, that is, wall 9 is forced against wall 13 and wall 14 is brought into engagement with wall 10. There is thus exerted a peripheral clamping pressure upon the holding member 2, 3 and the latter by the same action is secured to the handle. Both actions are effected by a single screw movement of the ferrule 4. The pressure forces, as will be readily understood, can be brought to bear or can be released in a gradual and safe way and can be adjusted to minutest differences in the gauge of the blade.

The slight convergence of the stud portions at the extreme rear of the holding member assures that parallel clamping faces can be presented for reception of the blade as distinguished from the customary clamping device where clamp pressure at the rear will cause spreading of the jaws at the forward part. The clamping faces therefore can be formed flat along their entire operative length and, thus, when closed, will be contiguous with the blade over the entire area of engagement. The point of contact between the converging stud portions also may function when the clamp is tightened somewhat like a fulcrum or point of support and thus permit a certain degree of spring action between the jaws.

The forwardly and laterally flattened configuration of the jaws also permits an easy gripping and reduces obstruction of the view during the cutting operation. Furthermore, when turned sidewise, it enables the operator to hold the blade almost parallel to a horizontal surface. If desired, the blade, for instance, a fractional portion of a razor blade, may also be placed into the holding member in a position where its cutting edge projects forwardly from the holding

3

member. In this manner, full use could be made of the beveled front edge 7a and the chamfer 7c.

From the above description it will be obvious that the blade holder of our invention has particular usefulness in emergencies, where the conventional types of scalpels are unavailable, as, for instance, during military operations in war time. It permits the surgeon to perform his work with ordinary razor blades irrespective of the shape of knife required and thus also relieves him of the necessity of resharpening and re-sterilizing his instruments.

Manifestly, numerous modifications of the invention are possible without departing from its basic spirit. We, therefore, do not wish to be limited otherwise than by the language of the appended claims.

We claim:

1. A blade holder for surgical use or the like comprising a handle, a tubular end portion provided on said handle, a pair of complementary jaws, the said jaws having forwardly projecting gripping portions and rearwardly extending body portions, flat clamping faces provided on the inner sides of said gripping portions, projections provided on the inner sides of said body portions, the said projections having an aggregate depth substantially equal to the thickness of the blade to be held, and locking means for applying peripheral pressure to said body portions and for securing the same in said tubular end portion, the said gripping portions then projecting outwardly from said tubular end portion and locking means.

4

2. A blade holder for surgical use or the like comprising a handle, a pair of complementary jaws, the said jaws having forwardly projecting gripping portions and rearwardly extending body portions and having a receding front face and exterior converging sides, the latter forming a narrow longitudinal ridge at their junction, flat substantially continuous clamping faces provided on the inner sides of said gripping portions, converging faces provided on the inner sides of said body portions, a sleeve, cooperating clamping surfaces on said body portions and said sleeve, and means for securing said sleeve over said jaws and to said handle so as to hold the parts in association, the said gripping portions then projecting outwardly from said sleeve.

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