

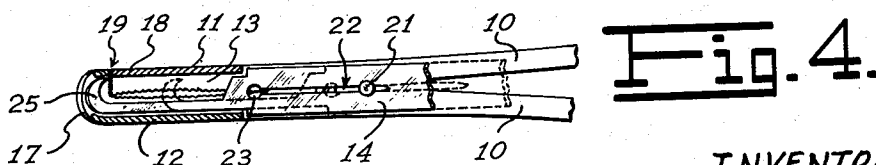
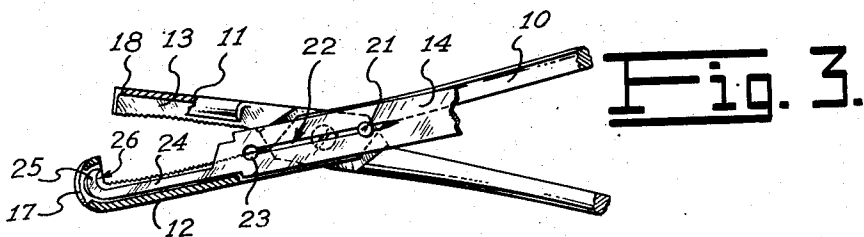
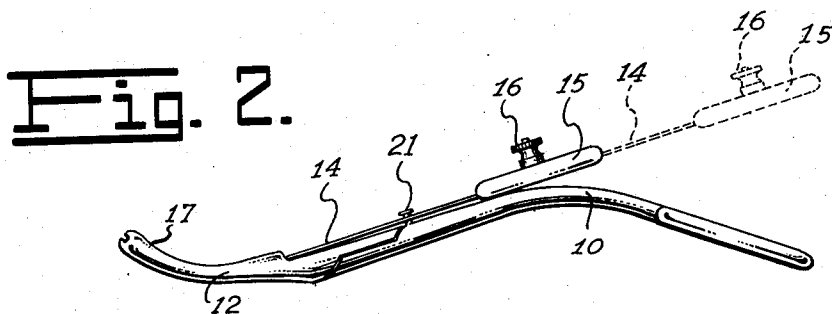
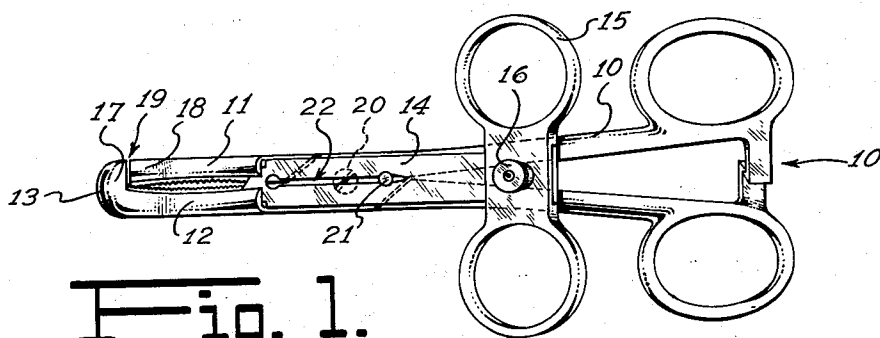
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INSTRUMENT FOR SURGICAL OPERATIONS

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INSTRUMENT FOR SURGICAL OPERATIONS

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4 Claims. (Cl. 128—305)

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The present invention relates in general to instruments for surgical operations and particularly to surgical pliers with a knife incorporated therein, for making cuts without causing hemorrhages, and refers still more particularly to certain useful improvements in pliers having a knife incorporated therein, whereby may be effected bloodless enucleations or any cut without hemorrhage, in surgical operations.

As is known to all surgeons and persons familiar with the art in general, upon cutting veins, blood vessels, etc., copious hemorrhages are produced, which it is difficult to avoid and which oblige the surgeon to act under special conditions which are almost always unfavorable, particularly in certain instances or surgical intervention such for example as the enucleation of an eye. In this specific case, the central blood vessels usually bleed copiously as soon as the optical nerve is cut, and this hemorrhage obliges the surgeon to speed up as much as possible the last phases of the operation. To avoid such hemorrhage, the most logical thing would be to compress the optical nerve with pliers before cutting it, but it is not possible to construct pliers of a size or nature such as to leave sufficient space in the orbit for introducing therewith the scissors or half-moon knife.

To overcome said difficulties, I have conceived the present instrument for surgical operations, consisting of special pliers provided with a guillotine on one of the blades so that at the time of compressing the nerve, vein, or blood vessel, it may be cut with the same instrument.

In view of the foregoing, the principal object of the invention is to provide a surgical instrument for operations which allows of effecting a bloodless enucleation or any other surgical intervention wherein it be important to produce a hemostatic action simultaneously with the cut, to which end this instrument comprises pliers on one of the blades of which a sliding knife has been adapted with a guillotine.

These and other details, features and advantages of the invention will be made clearly evident in the course of the following description as likewise in the drawings annexed in illustration thereof, the same reference characters serving in said drawings to indicate the same parts in the four figures shown.

In said drawings:

Fig. 1 is an elevational front view of a pair of surgical pliers having a knife incorporated and built in accordance with the present invention.

Fig. 2 shows a projection of the same instrument for surgical use, of Fig. 1, but in profile or

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side elevation, the displacement of the knife incorporated in the holding pliers being shown in broken lines.

Fig. 3 is a detail of the pliers in open position, partially broken away and in longitudinal section at their ends, more clearly to show the disposition of the cutting knife which acts as a guillotine, and

Fig. 4 is also a detail of the same surgical instrument projected from that of the preceding figure but showing the holding pliers closed, the displacement of the knife or guillotine being shown in broken lines.

Before describing in detail and specifically the surgical instrument of my invention, as shown in the attached drawings, I wish it to be clearly understood that the drawings illustrate enunciatively and by no means in a limitational manner one of the preferred ways of carrying out the invention without the latter's being limited to the specific details illustrated and described, and particularly that the surgical pliers may be of any known class or form. Therefore recourse may be had to such variations and modifications as may become or be considered necessary or convenient in practice, without departing from the principles and sphere of the invention and always within the scope of the claims annexed to this description.

As illustrated in the attached drawings, the surgical instrument of the invention comprises the usual curved pliers 10, the arms or jaws 11 and 12 of which are provided with longitudinal grooves 13, which serve as a guide or track for the knife 14, which is actuated by means of a handle 15 having eyes or hoops, to which it is secured by means of screw 16. This knife 14 will be described in detail later.

The arms or jaws 11 and 12 of pliers 10, provided with longitudinal grooves 13 wherein slides knife 14, have specially formed ends since the end of the pressure jaw 12 has an extension 17, which spans the width of the two jaws combined and precisely overlaps end 18 of adjacent jaw 11, as clearly seen in Fig. 1 of the attached drawings. The end 18 of pressure member or jaw 11 is cut at right angles as seen in said figure. It should be mentioned that between the cut end of member or jaw 11 and the lower end of extension 17 of jaw 12, there is a small space or separation 19 through which the blood vessel, nerve or vein to be sectioned passes. This space or separation may also be seen in Figs. 1 and 4 of the drawings.

On the arm of the jaw 12 and near axis 20 of pliers 10, there is a small bolt or stud 21 having an enlarged head.

Knife 14 has in its central portion a slot 22 in

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a longitudinal direction, said slot ending in a circular perforation 23 to permit passage of the head of bolt 21. In this way, said bolt 21 acts as a guide and limits the sliding movement of blade 14. This blade 14 has a blade portion 24 near its end and terminates in a hook-like guillotine portion 25 which has an exceedingly sharp edge portion 26 (Fig. 3).

When knife 14 is at the end of its stroke, that is when bolt 21 abuts with the upper end of slot 22 of said knife, hook-like guillotine portion 25 of knife 14 lies in the lateral portion 17 of arm or jaw 12, and upon pulling on said knife by means of the handle 15, to make it slide longitudinally in the grooves 13 in arms or jaws 11 and 12, the sharp edge portion 26 passes along said grooves 13, easily cutting the blood vessel, nerve, or vein, which has been clamped by means of the jaws of pliers 10.

The handling or operation of the instrument is very simple. In the case of enucleating an eye, which we have been taking as an example, one proceeds as follows: Before starting the intervention, one closes the pliers to a convenient extent and introduces the knife 14 into the space formed by longitudinal grooves 13 in jaws 11 and 12, until guillotine portion 25 registers with the extension 17 of pressure jaw 12. After resecting the extrinsic muscles, one opens the pliers and penetrates into the orbit with them, in such a way that the optical nerve is pressed or clamped between members or jaws 11 and 12. Then one pulls on the knife by means of the handle 15 and said knife cuts with great ease the optical nerve, whereupon the knife is drawn out of the pliers which remain in position, insuring the hemostasis. Subsequently the eyeball is removed and the operation is continued in the usual manner, without the presence of a hemorrhage originating the drawbacks aforementioned.

The present instrument is so constructed that the traumatized surface of the stump is visible; it is cauterized to close the central blood vessels before withdrawing the pliers.

Having thus particularly described the invention, what I consider as new and desire to obtain by Letters Patent is:

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1. A surgical instrument comprising a surgical pliers including a pair of jaws, said jaws having coinciding grooves in their opposed faces, a knife including a blade slidably mounted for longitudinal movement in and spanning said grooves when said jaws are closed, and a handle connected with said blade for sliding said blade longitudinally of said jaws.

2. A surgical instrument as defined in claim 1 wherein said pliers comprise a stud having an enlarged head, said stud being positioned adjacent the pivotal connection of said pliers, said knife having a slot between said blade and said handle with an enlarged end in said slot whereby said knife may be removably mounted on said pliers by passing said stud through the enlarged end of said slot, said grooves opening through the corresponding sides of said jaws to permit the insertion or removal of said blade therein when the knife is mounted on or removed from said stud.

3. A surgical instrument as defined in claim 2 wherein one of said jaws has a lateral extension on its free end precisely overlapping the free end of the other of said jaws, the free end of said other jaw being perpendicular to its length and being spaced slightly from the lateral extension on said one jaw.

4. A surgical instrument as defined in claim 3 wherein said knife blade comprises a shank portion nested within the groove of said one jaw and a hook-like guillotine portion spanning said grooves, said lateral extension having a groove in communication with the groove in its supporting jaw for receiving said hook-like guillotine portion to free the space between said extension and the end of the other jaw.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
352,245	Hullhorst	Nov. 9, 1886
1,918,700	Harris	July 18, 1933
2,288,445	Frizell	June 30, 1942