Jan. 23, 1968 C. B. HOPPE 3,364,572

SURGICAL SUTURE EXTRACTOR

Original Filed Oct. 27, 1964 2 Sheets-Sheet 1

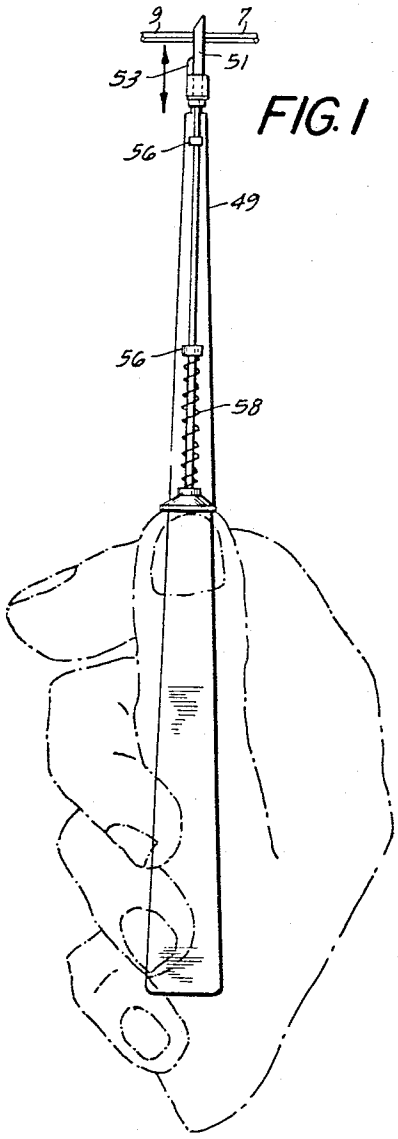

FIG. 1

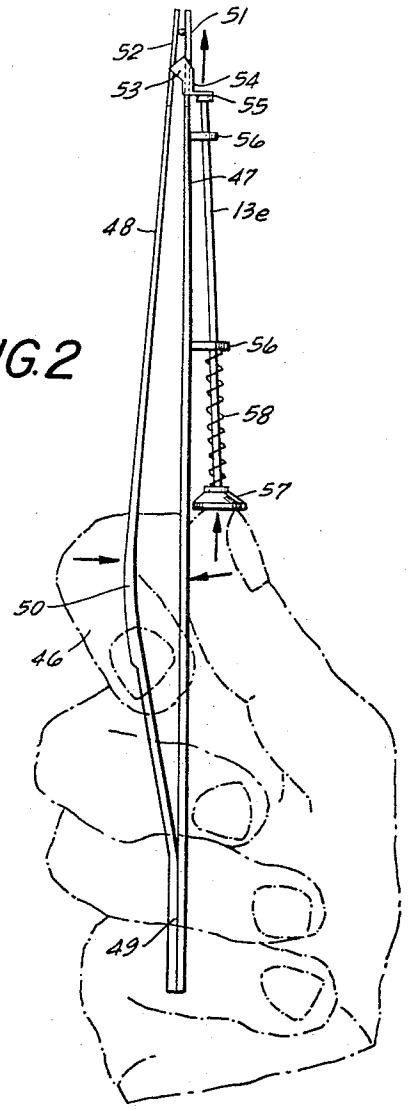

FIG. 2

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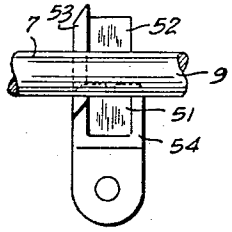
FIG.3



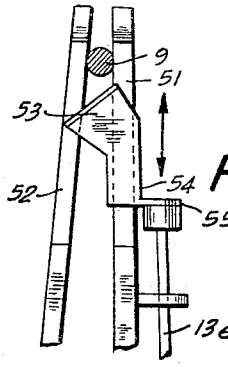


FIG.4

FIG.6

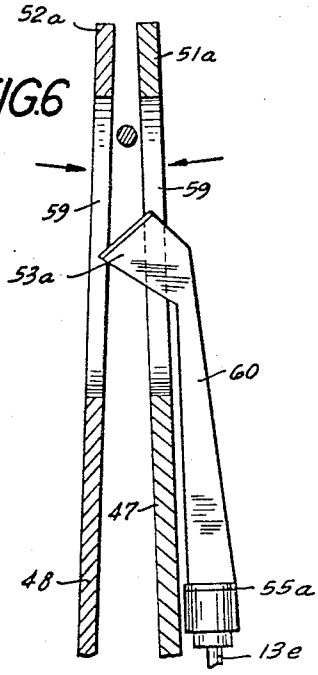


FIG.5

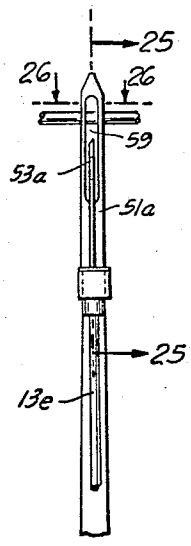
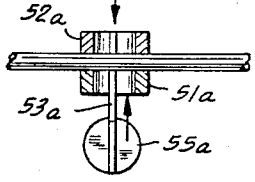


FIG.7



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SURGICAL SUTURE EXTRACTOR

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Original application Oct. 27, 1964, Ser. No. 406,861, now Patent No. 3,328,876, dated July 4, 1967. Divided and this application Dec. 21, 1966, Ser. No. 623,159
4 Claims. (Cl. 30—124)

This application is a division of my application Ser. No. 406,861 filed Oct. 27, 1964, now Patent No. 3,328,876.

This invention relates to instruments for removing sutures and more particularly to a device to be used by surgeons to facilitate the lifting of sutures after they have been cut. More especially the invention relates to an improved device for severing a suture and substantially simultaneously gripping the cut-off thread or stitch so that it can be removed in substantially a single motion of the surgeon's hand.

In accordance with the invention the instrument comprises a slender elongated device in the form of a tweezers, having means at its outer or operating end for engaging and holding a suture, together with a knife arranged to be slidable adjacent the operating end of the device, and means near the grasping portion of the device operable by the hand including one or more of the fingers for causing the knife to slide forward and sever the suture close to the point where it is engaged and held at the outer end of the device.

The invention will be better understood from a consideration of the accompanying drawings and also from the detailed description following.

In these drawings:

FIGS. 1–4 show a tweezer type device embodying the invention, FIG. 1 showing a side view, FIG. 2 being a side view at right angles to FIG. 1 and looking from the left of that figure; FIG 3 being an end view looking from the top of FIG. 1 and FIG. 4 being an enlarged fragmentary view of the outer portion of the parts shown in FIG. 2;

FIGS. 5–7 show a modification, FIG. 5 being a side view of the upper end portion of the device, FIG. 6 a sectional view taken on line 6—6 of FIG. 5 and drawn to a larger scale, and FIG. 7 being an end view from the top of FIG. 5.

Referring to FIGS. 1–4 the tweezers device has blades 47 and 48 which are welded together at their butt ends as indicated at 49, the former blade being straight and the latter advantageously curved outwardly as shown in FIG. 2 to provide a protuberance 50 to be engaged by the index finger 46 for manipulating the tweezers to grasp the suture. At their operating ends tweezer blades 47 and 48 are provided with narrow jaws 51 and 52 which may be square in end view as shown in FIG. 3.

The knife 53 has an angular cutting edge as shown in FIG. 2 and is provided with a holder 54 which slides on the upper portion of jaw 51 (FIG. 3). Holder 54 has an extension 55 into which the outer end of the actuating rod 13*e* is threadedly connected. Rod 13*e* slides in two bearings 56 which are secured to the outer surface of blade 47. The thumb piece 57 is secured to the butt end

of operating rod 13*e*. A retracting spring 58 is arranged between thumb piece 57 and the adjacent bearing 56.

The device is adapted to be grasped by the hand and the tweezers operated by the index finger (FIG. 2) while the cutting knife is operated by the end of the thumb.

Shown in FIGS. 5–7 is a variation of the construction shown in FIGS. 1–4, the difference being that the narrow jaws 51*a* and 52*a* are slotted as indicated at 59, and the knife blade 53*a* operates within this slot instead of sliding along the sides of the two jaws as in the form shown in FIGS. 1–4. The shank 60 of blade 53*a* is longer than in the case of blade 53, but otherwise the mounting including extension 55*a*, and the operating of the blade by actuating rod 13*e* is the same.

As may be understood from FIG. 5, the slots 59, one in each blade 51 and 52, are aligned with each other transversely and because of these slots blades 51*a* and 52*a* have cooperating gripping portions on opposite sides of the knife 53*a* so that the suture is gripped on both sides of the knife during the cutting of the suture.

I claim:

1. An instrument for removing sutures comprising a tweezer-like device adapted to be grasped by the hand having two cooperating blades joined to one another at the inner end portion of each blade and resiliently spaced apart at the outer end portions and operable to grip a suture between said outer end portions, said blades having transversely aligned slots one in each blade extending lengthwise of the blades throughout the gripping portions of the blades, a knife holder mounted for sliding movement on the device and including a knife positioned within said slots and arranged to span the gripping portions of the blades when closed upon a suture, and means mounted on one side of the device operable by the hand which grasps the device for moving the knife holder outwardly to cause the knife to sever the suture held by the tweezer blades.

2. An instrument for removing sutures as set forth in claim 1 wherein the transversely aligned slots extend lengthwise outwardly beyond the region of the blades where the suture is gripped so that the blades grip the suture in two spaced locations on opposite sides of the blade as the knife cuts the suture.

3. An instrument for removing sutures as set forth in claim 1 wherein the blade on the opposite side of the device from the knife operating means has a protuberance to be engaged for manipulating the tweezers to grip the suture.

4. An instrument for removing sutures as set forth in claim 1 in which the knife holder is mounted on a rod arranged to slide in spaced bearings mounted on one of the blades.

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