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633,482, Apr. 25, 1967, now abandoned.

354,018	12/1886	Krieg	128/339
784,995	3/1905	Edwards	128/339
1,131,155	3/1915	Murphy	128/339
1,337,480	4/1920	Matthaei	128/339 X
1,678,361	7/1928	Shearon	128/339
2,581,564	1/1952	Villegas	128/339
2,891,547	6/1959	Stradella	128/339

FOREIGN PATENTS

638,792	4/1962	Italy	128/339
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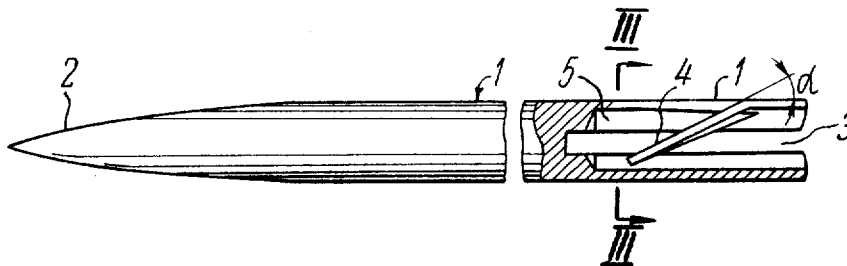
[54] **SURGICAL NEEDLE WITH SUTURE RETAINING MEANS**
 4 Claims, 4 Drawing Figs.

[52] U.S. Cl.	128/339
[51] Int. Cl.	A61b 17/06
[50] Field of Search	128/339, 340; 223/102

[56] **References Cited**

UNITED STATES PATENTS			
156,795	11/1874	Jenkins	128/339

ABSTRACT: A surgeon's needle has a rear portion in the shape of a tube which opens to the rear, a longitudinal slot being formed in said rear portion equal to the thickness of the suture material, the slot dividing the rear portion into two resilient sections. A resilient tongue is stamped from one of the sections and the end of the tongue is in the direction of the needle point, the tongue extending through the longitudinal slot.



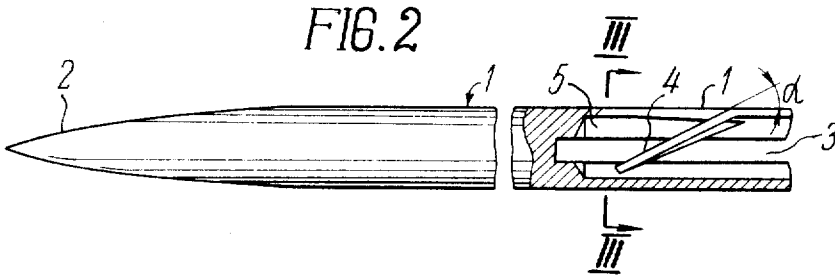


FIG. 1

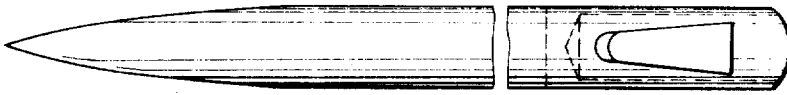


FIG. 4

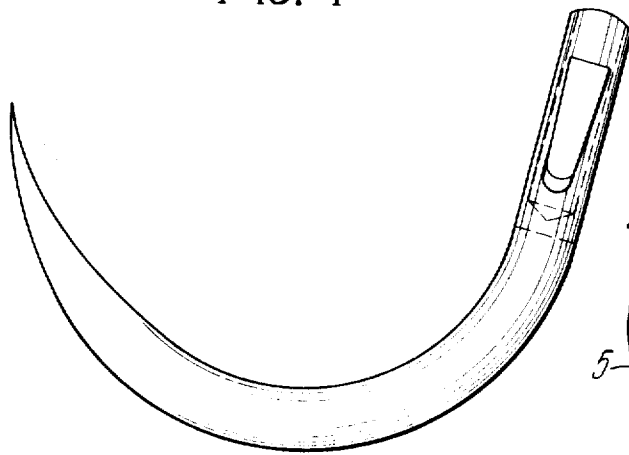
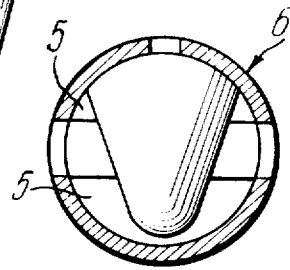


FIG. 3



SURGICAL NEEDLE WITH SUTURE RETAINING MEANS

This application is a continuation of Ser. No. 633,482, filed Apr. 25, 1967, now abandoned.

This invention relates to surgeon's needles.

In the surgeon's needles known heretofore a means for fixing the suture material is located in a longitudinal slot at the needle rear end.

Disadvantages of the known needles include traumatization of the tissues by the needle eye and the suture material extending from it, this traumatization creating conditions for a secondary infection which, in turn, results in failure of the sutures.

Another type of known surgeon's needle is the atraumatic nonreusable needles in which the rear end is made in the form of a cup with a pressed-in suture thread.

A disadvantage of such needles is that they are nonreusable and cannot receive different kinds of suture material in the course of operation so that a greater number of needles is required.

A disadvantage of the atraumatic needles packed in ampuls is that they are not quite reliable with respect to sterility during storage and transportation because the ampuls are likely to crack and become broken and the sterilizing material can be subjected to noxious atmospheric effects.

Additionally, there is no guarantee in the reliability of fixing the suture material when the latter is rolled into the end of the needle.

In accordance with the above considerations, an object of the present invention is to provide a surgeon's needle of the atraumatic reusable type sterilizable by a conventional method.

Another object of the invention is to provide a surgeon's needle which can be used with any required type of suture material.

To achieve these objects the surgeon's needle is provided with a means for fixing the suture material, said means being located in a longitudinal slot opening at one end and made in the form of a springy tongue, covering said slot, set at an acute angle to the needle axis and directed towards the needle point.

The internal surface of the needle walls along the slot defines longitudinal grooves for accommodating the suture material, extending from the rear end of the needle; the tongue being stamped from the slot wall; the rear end of the needle has the shape of a tube with a slot on the diametrical plane.

This design of the needle allows the suture material to be wedged between the internal walls of the needle and the tongue, it also allows recharging the needle quickly with any required type of suture material in the course of operation and excludes traumatization of tissues by the needle.

An embodiment of a surgeon's needle is shown in the drawing in which:

FIG. 1 is a side view of the needle;

FIG. 2 shows the same needle in partial section at its rear end;

FIG. 3 is a section, taken on line III-III of FIG. 2; and

FIG. 4 shows a curved needle.

The needle 1 has a point 2 at one end and a longitudinal slot 3 for suture material, at the other end, said slot being open at the rear.

Stamped from one of the walls of the slot 3 is a springy or resilient tongue 4 (FIG. 2) extending across the slot, at an acute angle a relative to the needle axis and with its free end directed towards the needle point.

The rear end of the needle has the form of a tube 6 slotted diametrically at 3, thus, longitudinal grooves or passages 5 (FIG. 3) are formed on the internal surface of the needle walls along the slot.

The needle can be made of a curved shape as shown in FIG. 4.

The needle is manipulated as follows. The needle is clamped in a needle holder, the suture material is inserted into the slot 3 in the rear end of the needle up to the end of said slot then the material is pulled back along the top of tongue 4, thus being wedged between the tongue 4 and the walls of the tube 6, the free end of the suture material passing the grooves 5 within the confines of the walls of the needle.

The needle, is freed of suture material as follows.

The suture material is pulled down towards the needle point, and then out of the slot 3 thus freeing the needle.

What We claim is:

1. A surgeon's needle, comprising a pointed rod having a rear portion in the shape of a tube which is open rearwardly; said tube having a longitudinal slot diametrically positioned therein for the introduction of suture material, said slot extending from the open end of the tube forwardly to divide said rear portion into two resilient sections; and a resilient tongue of tapering transverse extent, stamped from one of said resilient sections and extending beyond and across the slot to a point adjacent the other resilient section and facing forwardly at an acute angle with respect to said tube to wedge suture material between the tongue and said tube and in frictional contact with the lateral edges of the tongue.

2. A needle as claimed in claim 1, wherein said tongue is of generally triangular shape and is positioned in said one resilient section to define passages for rearward travel of suture material within the confines of the tube.

3. A needle as claimed in claim 1, wherein said tube and tongue are constituted of thin plate material, whereby the tongue is deformatively resilient.

4. A needle as claimed in claim 1, wherein said tongue when stamped from said one resilient section of the tube provides an opening in said section.

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