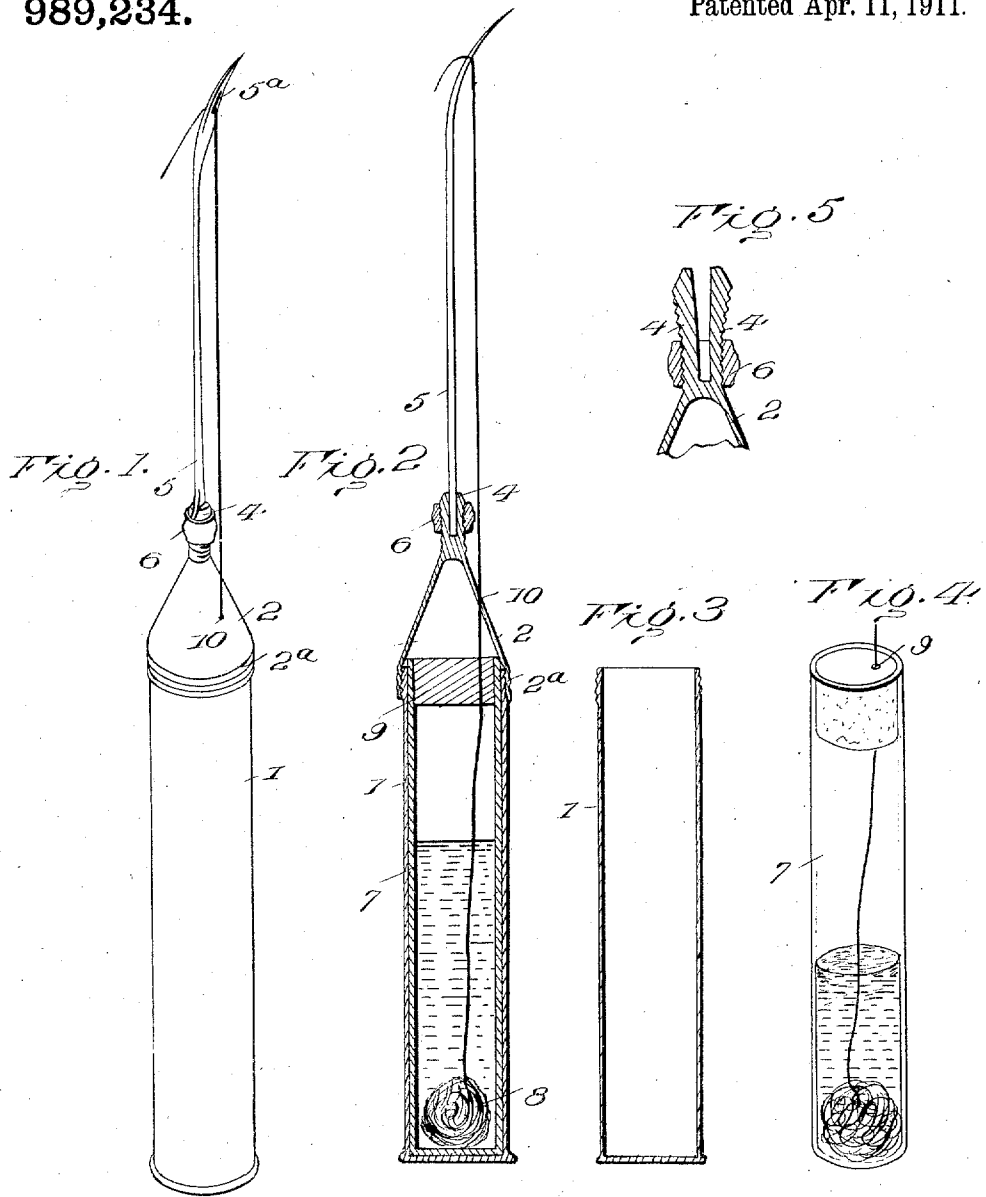


989,234.

Patented Apr. 11, 1911.



Inventor

C. G. Davis

Witnesses

[Signature]

W. W. Harrison

By

[Signature] Attorneys

UNITED STATES PATENT OFFICE.

CLEVELAND G. DAVIS, OF MANISTEE, MICHIGAN.

SURGICAL NEEDLE.

989,234.

Specification of Letters Patent.

Patented Apr. 11, 1911.

Application filed April 9, 1908. Serial No. 426,110.

To all whom it may concern:

Be it known that I, CLEVELAND G. DAVIS, citizen of the United States, residing at Manistee, in the county of Manistee and State of Michigan, have invented certain new and useful Improvements in Surgical Needles, of which the following is a specification.

The present invention relates in general to surgery and more particularly to an improved surgical needle embodying novel means for sterilizing the thread employed in connection therewith.

The invention further contemplates means for supplying the needle with thread from a roll or bobbin, thereby enabling several yards of thread to be employed and a number of stitches to be taken without the necessity of rethreading the needle.

A further object of the invention is the provision of a needle of this character which is simple and inexpensive in its construction and will operate in an effective manner to accomplish the desired result.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view of a surgical needle embodying the invention. Fig. 2 is a longitudinal sectional view through the same. Fig. 3 is a similar view of the handle. Fig. 4 is a detached perspective view of the receptacle arranged within the handle and adapted to contain an antiseptic solution for sterilizing the thread. Fig. 5 is an enlarged sectional view through the needle engaging clamp.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawing, the numeral 1 designates the handle which has a hollow or tubular formation and is normally closed by means of a cap 2. This cap is approximately conical in shape and is provided at its base with a flange 2^a which is threaded upon the mouth of the handle 1. Jaws 4 are located at the apex of the cap 2 and are designed to engage the shank of a needle 5. These jaws are exteriorly threaded and have their outer faces inclined for coöperation with a clamping ring 6 which when moved outwardly tends

to force the jaws inwardly so as to engage the shank of a needle placed between the same. However, by turning the clamping ring inwardly the jaws will be permitted to spread apart and release the needle. It will thus be apparent that various sizes and forms of needles may be applied to the cap 2 as may be required.

A receptacle 7 fits snugly within the handle 1 so as to be completely inclosed therein and protected from injury thereby, the said receptacle being designed to contain an antiseptic solution. A ball of thread 8 is placed within the receptacle 7 and the end of the thread is drawn through an opening in the stopper 9 of the receptacle, the said stopper serving to prevent leakage of the antiseptic solution from the receptacle and also acting to expel all surplus moisture from the thread. After being drawn through the stopper 9 the thread is passed through an opening 10 in the cap 2, extends along the needle 5 and is threaded through the eye 5^a of the needle. It will thus be obvious that the thread held within the receptacle is sterilized by the antiseptic solution and that the thread may be drawn from the receptacle as required for use in connection with the needle.

In using the device the needle is pushed through the incision and carries the thread with it, the operator taking hold of the end of the thread and pulling back the needle so as to leave the thread in the wound as a stitch to be tied after the assistant has cut it. The needle is then ready for another stitch without the necessity of rethreading the same and the thread which is supplied to the needle is completely sterilized by the antiseptic solution within the receptacle. It will be obvious that should it be found desirable the thread may be wound upon a bobbin previous to being placed in the receptacle, and that any suitable form of thread may be employed, either silk, linen, or catgut.

The peculiar construction of the surgical instrument above described has certain advantages which are peculiarly due to the shape of the cap and the peculiar relation which the cap has to the receptacle contained within the handle. The handle is imperforate or solid and is only open at one end, this end being closed by the conical cap and by the stopper, to the internal receptacle. Hence, the thread is entirely con-

tained within the handle and is not exposed to the open air until the thread passes out through the conical cap. The handle being imperforate, the thread is not likely to come into contact with the hands of the operator, and thus become contaminated. The conical cap provides for a chamber between the stopper for the tube 7 and the cap. The end of the thread, when the device is not in use, projects through the stopper 9, but not through the cap, and hence is entirely protected by the cap. When it is desired to use the device, the cap can be unscrewed, the thread passed through the hole 10 in the cap, and threaded into the needle. Under ordinary circumstances, however, the thread is protected. The interior receptacle 7 has practically the same dimensions as the handle, though preferably it projects somewhat above the handle, and thus the conical cap contacts with the receptacle 7 and holds it in place so that the receptacle cannot shift as it would if the receptacle were slightly smaller than the handle. Furthermore, the cap 2 acts to hold the stopper 9 in place within the inner receptacle and prevents the stopper rising so as to come out of the end of the receptacle. As a consequence, the opening through the stopper 9 for the passage of the thread, may be made relatively small so as to tightly fit the thread. Thus leakage is prevented, and at the same time the frictional engagement of the thread with the stopper will not act to draw the stopper out of the mouth of the receptacle, the stopper being held in place by the inwardly inclined walls of the cap. The conical formation of the cap has likewise this advantage, that it permits the cap to be turned relatively to the stopper so that the thread opening in the cap stopper shall not exactly align, whereas if the cap were not conical

but extended directly across the end of the handle so as to contact with the stopper and hold it in place, a very slight difference in registry between the thread hole in the cap and the thread hole in the stopper would tend to kink the thread. This would not only tend to prevent the withdrawal of the thread, but would also act to cut it. The inner receptacle 7 extending as it does above or even with the mouth of the handle 1, and being closed by the stopper 9, there is little chance of leakage past the screw-threaded flange 2^a. The handle being solid, this is the only point where leakage can occur.

Having thus described the invention, what is claimed as new is:

A surgical instrument consisting of a cylindrical, tubular, imperforate handle open at one end, a cylindrical receptacle adapted to snugly fit within the handle with its upper edge slightly projecting beyond the open end of the handle, a stopper closing the mouth of the receptacle and having an opening extending therethrough for the passage of the thread, a hollow conical cap having an annular interiorly screw-threaded flange at its base engaging the end of the hollow handle and closing the same, said cap contacting with the slightly projecting edge of the receptacle and holding the receptacle and stopper securely in place against movement, said cap being perforated for the passage of the thread, and a clamp forming the end of the cap and adapted to engage a needle.

In testimony whereof I affix my signature in presence of two witnesses.

CLEVELAND G. DAVIS. [L. s.]

Witnesses:

JAMES L. SIBBEN,
KATHRYN CICHY.