United States Patent

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[54] **SYSTEM FOR HANDLING SURGICAL SPONGES**
4 Claims, 3 Drawing Figs.

[52] **U.S. Cl.** **128/296**
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[50] **Field of Search** 128/296

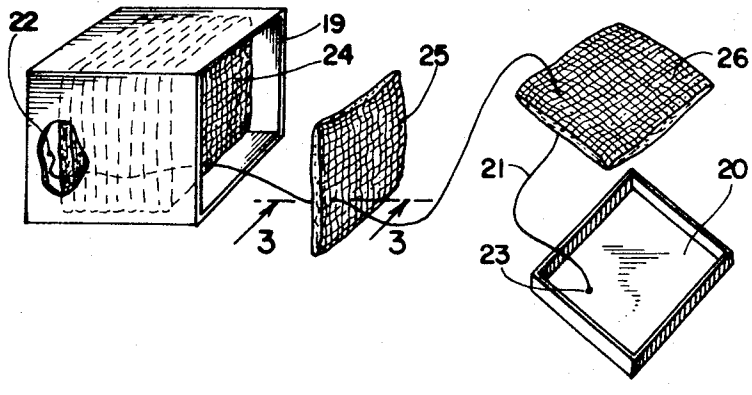
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ABSTRACT: A system for handling surgical sponges in order to assure removal of those used during a surgical operation without the necessity of counting includes a line such as a flexible thin steel or nylon wire to which a plurality of sponges are serially coupled. A portion of the line is at all times held exterior to the incision, the sponges themselves being captive on the line. Sufficient line slack is available to permit a surgeon to utilize and manipulate the sponges within the incision without separation of the sponges from the line. Removal of all of the sponges used in the surgery is assured by tracing the location of the sponges from the exterior portion of the line and removing them with the line prior to closure.



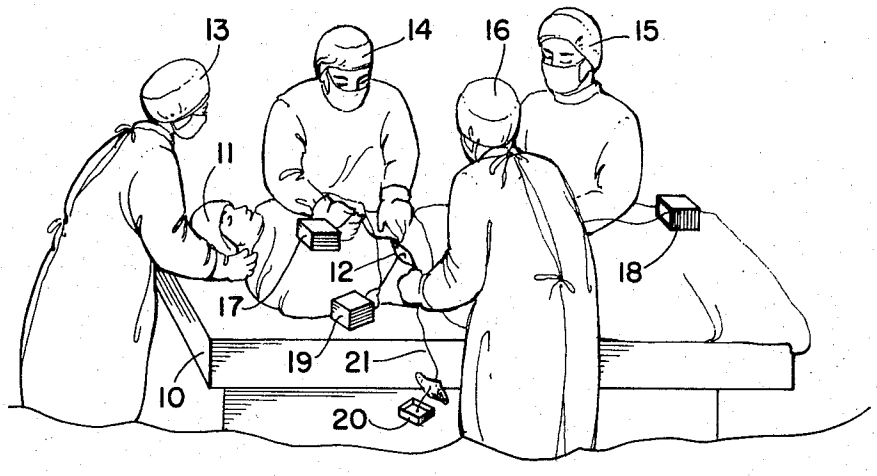


FIG. 1

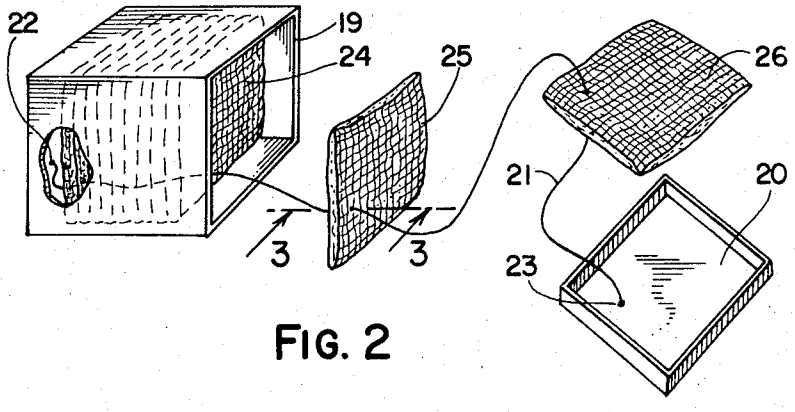


FIG. 2

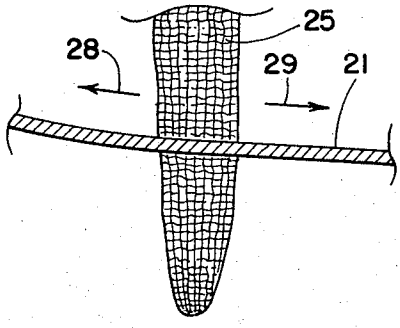


FIG. 3

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SYSTEM FOR HANDLING SURGICAL SPONGES

This invention relates generally to surgical operations and more particularly to a novel system for handling surgical sponges in a manner to avoid the necessity of counting the sponges by assuring that all sponges are removed from an incision prior to closure.

BACKGROUND OF THE INVENTION

Most conventional surgery in operating rooms requires the use of many sponges or equivalent absorbent pads for swabbing out areas within the incision, soaking up blood, holding certain tissue or organs in positions while operating on other interior portions of the incision. In utilizing such sponges which often take the form of two-by-two, three-by-three, or four-by-four inch square pads of absorbent cloth material, it is mandatory that a sponge count be taken both prior to an operation and after an operation is completed. This count is necessary to assure that one or more sponges have not been left within the incision prior to closure.

The foregoing problem has become sufficiently acute that computers for counting the sponges are often used. In addition, there is still required one or more nurses or other aides charged with the specific responsibility of carrying out both the preoperative and postoperative sponge count as an added safety measure to the count provided by mechanical or electrical means.

Notwithstanding the foregoing precautions, there are still instances in which sponges have been left inside of a patient after closure. In these cases where there has been a mistake in the counting, it is necessary to open up the incision and remove the sponges.

It is of paramount importance that should one or more sponges or other item be left within a patient after closure, the same be detected as soon as possible to avoid serious complications. Towards this latter end, there have been provided sponges with X-ray sensitive material impregnated in at least a portion of the sponge so that as a routine matter, a patient may be X-rayed after closure to determine whether any sponges have been left even if it is known that the count has been correct. Providing special sponges with X-ray sensitive material necessarily increases the cost of the sponges and in spite of this added feature, there is still necessitated personnel and equipment for counting. In any event, even if quick detection of a sponge left in the wound is realized, there is still the necessity of physically opening up the incision and removing the sponges.

One of the most frequent grounds for malpractice suits against doctors as well as hospitals is a consequence of the negligence involved in counting sponges resulting in one or more sponges remaining within a patient. Malpractice insurance rates are thus maintained at a high level.

BRIEF DESCRIPTION OF THE PRESENT INVENTION

With the foregoing in mind, the present invention contemplates a system of handling surgical items such as sponges in a manner which absolutely precludes any possibility of the item or sponges remaining inside of a patient prior to closure all to the end that the counting operations, providing X-ray sensitive material in sponges or other items, and the attendant personnel requirement, time, and other associated risks are wholly eliminated.

Briefly, the invention contemplates the provision of a line which may take the form of a flexible steel wire or nylon cord upon which items such as surgical sponges are serially coupled. The arrangement is such that the sponges are at all times held captive on the line.

The line itself includes sufficient slack that a portion of the line such as its two ends may at all times be maintained exterior of any incision in the patient and yet the sponges may be manipulated within the incision. When the operation has been completed, it is not possible to close the incision until the line and sponges have been removed since a portion of the line as noted is always maintained exterior of the incision.

In a preferred embodiment of the invention, the sponges are packaged in a container having a cover, the flexible line being secured at one end to the container itself and its other end being secured to the cover. The cover can thus be removed and the ends of the line are anchored, the container and cover remaining exterior of the incision. The sponges may then be successively manipulated on the line and towards this end, they are preferably coupled to the line for sliding movement.

It will be evident from the foregoing that the invention thus assures that all sponges will be removed from an incision prior to closing and thus counting and the like is not necessary.

BRIEF DESCRIPTION OF THE DRAWINGS

A better understanding of the invention will be had by now referring to a preferred embodiment thereof as illustrated in the accompanying drawings, in which:

FIG. 1 is a perspective view of an operation wherein the system for manipulating surgical sponges in accord with the invention is used;

FIG. 2 is a perspective, partly broken away, showing one type of packaging incorporating the principles of the invention; and,

FIG. 3 is a greatly enlarged fragmentary cross section taken in the direction of the arrows 3—3 of FIG. 2.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring first to FIG. 1, there is shown schematically an operating table **10** supporting a patient **11**. In the undraped portion of the patient there is shown an incision **12** within which an operation is being carried out.

Normally, there is in attendance at the operating table an anesthetist **13**, the primary surgeon **14**, and two or more assistant surgeons such as indicated at **15** and **16**.

In any type of major surgery such as illustrated in FIG. 1, there is a requirement for a large number of sponges which may be handled not only by the primary surgeon but also by the assistant surgeons during the operation for manipulation within the incision **12**. In accord with the present invention, a unique method and packaging for manipulating the sponges is utilized. In the embodiment to be described, the packaging may take the form of a container such as indicated at **17** incorporating a plurality of sponges. Where three surgeons are at work on the patient, each would normally be provided with such a container as indicated at **18** and **19** for the surgeons **15** and **16**. Each of the containers includes a cover such as indicated at **20** for the container **19** and a flexible line **21** which may constitute thin steel flexible wire, nylon cord, chain structure with miniature links, or an equivalent flexible line structure. The various sponges within the container are captured on this line, the container and cover itself always remaining exterior of the incision **12**.

Referring to FIG. 2, further details of the packaging will become evident. As shown, the container **19** serves as an anchor means for one end of the line **21** as indicated at **22**. The other end of the line is in turn anchored to the cover **20** as indicated at **23**. Coupled to the line are the plurality of sponges such as indicated at **24**, **25**, and **26**.

In the preferred embodiment, the individual sponges are slidably coupled to the line and this may be accomplished by simply threading the line through portions of the sponges, the line itself being continuous and smooth so that the sponges can slide along the line.

Thus, referring to FIG. 3 for the sponge **25**, the line **21** is shown as a steel wire in greatly enlarged form simply passing through a portion of the sponge **27**. The slidability of the sponge **25** along the line **21** in either direction is indicated by the arrows **28** and **29**.

OPERATION

In utilizing the invention, the line **21** is provided with sufficient slack that the successive sponges from the container **19** may be utilized inside the incision **12** as shown in FIG. 1 while

the container **19** itself and cover **20** remain exterior to the incision. Thus, the surgeon will open his container by removing the cover such as the cover **20** and simply lay it to one side of the patient or even permit it to dangle over the edge of the operating table. He may then remove sponges from the container as needed, sliding the same along the line **21**. The slack provided in the line is quite sufficient so that the sponges may readily be manipulated within the incision **12** while at all times the end portions of the line anchored to the container and cover remain exterior of the incision.

As each sponge is used, it may simply be slid along the line **21** towards the cover portion and successive sponges removed from the container. Several sponges at a time may be positioned within the incision if necessary.

After the operation has been completed, before any one of the surgeons can close the incision, it is obviously essential to remove the sponges since portions of the line connecting the sponges lie exterior of the incision. Thus, by tracing from the portions of the line exterior of the incision to the sponges within the incision, and removing the same along with the line, it is assured that all sponges are removed from within the incision prior to closing.

From the foregoing, it will thus be evident that the present invention has provided a novel method and means whereby sponges may be manipulated during a surgical operation without the possibility of any sponges remaining within the incision. As a consequence, there is eliminated the necessity of pre or postoperative counting of sponges. Further, there is eliminated the necessity of providing sponges with X-ray sensitive material, expensive computers for effecting automatic counting, and the presence of extra personnel assigned to the specific job of counting sponges.

While the items captured by the line have been described as surgical sponges, the principles of the invention are clearly applicable to any item or items that might be employed in a surgical operation to assure that the same are removed prior to closure of the incision. Further, while the sponges or other items are preferably slidable on the line, they could be fixed to the line, sufficient slack being provided to enable the desired manipulation of the item or sponges within the incision.

The foregoing invention is therefore not to be thought of as limited to the specific example set forth for illustrative purposes.

What is claimed is:

1. A method of handling surgical sponges in order to assure removal of all those used during a surgical operation without the necessity of counting, comprising the steps of:

a. holding the two end portions of a line on which the sponges have been serially coupled for sliding movement on said line, exterior of the surgical incision at all times;

b. providing sufficient slack in said line to permit utilization of sponges within the incision without any uncoupling of the sponges from the line; and

c. withdrawing all of the sponges in the incision on the line by tracing from the line exterior of said incision the location of each sponge prior to closure of said incision.

2. A means for facilitating the handling of surgical sponges in order to assure removal of all those used in an operation without the necessity of counting, comprising:

a. a line;

b. a plurality of surgical sponges serially coupled for sliding movement on said line in a manner to prevent separation from said line; and

c. means for retaining at least one end portion of said line exterior of a surgical incision during an operation and means for retaining the sponges on the other end portion, said line having sufficient slack to permit manipulation of the sponges thereon within said incision whereby the location of all sponges may be traced from the one end portion of said line exterior of said incision and removed to thereby assure removal of all sponges from said incision prior to closure.

3. A packaging means for facilitating the handling of surgical sponges in order to assure removal of all those used in an operation without the necessity of counting, comprising:

a. a container having a cover;

b. a plurality of surgical sponges in said container; and,

c. a line in said container passing through each of said sponges so that said sponges are serially coupled to said line,

1. one end of said line being anchored to said container and

2. the other end of said line being anchored to said cover so that said sponges are captured on said line,

d. said line having sufficient slack that said cover may be removed and thereafter sponges successively removed from said container and manipulated in a surgical incision, with said container and cover remaining exterior of said incision,

whereby all sponges may be retrieved from said incision by tracing their location from the anchored ends of said line before closure of said incision.

4. The subject matter of claim **3**, in which said sponges are individually slidable on said line to facilitate manipulation thereof.

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