

C. DE W. LUKENS.
RECEPTACLE.
APPLICATION FILED APR. 29, 1911.

1,039,981.

Patented Oct. 1, 1912.

Fig. 1.

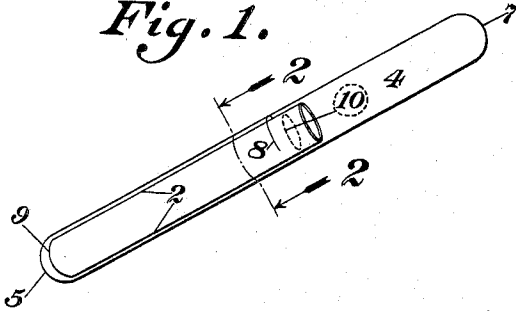


Fig. 2.

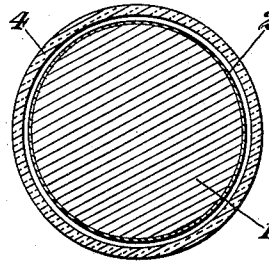


Fig. 3.

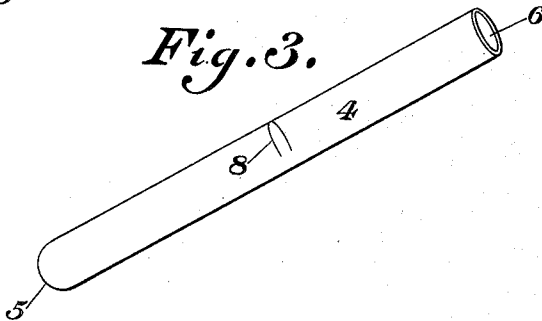


Fig. 4.

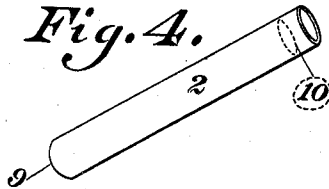
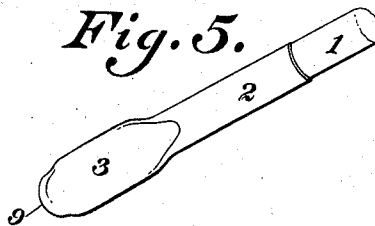


Fig. 5.



Witnesses:

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Inventor:

Clarence De Witt Lukens,

By *Hugh H. Wagner,*

His Attorney.

UNITED STATES PATENT OFFICE.

CLARENCE DE WITT LUKENS, OF ST. LOUIS, MISSOURI, ASSIGNOR TO C. DE WITT LUKENS SURGICAL MANUFACTURING COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

RECEPTACLE.

1,039,981.

Specification of Letters Patent.

Patented Oct. 1, 1912.

Application filed April 29, 1911. Serial No. 623,996.

To all whom it may concern:

Be it known that I, CLARENCE DE WITT LUKENS, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Receptacles, of which the following is a specification.

This invention has for its object the facilitation of surgical operations, this object being in part attained by subserving the convenience of the surgeon and likewise by providing bone-wax in such form as to be ready to hand at all times and moreover by providing same in a sterilized and non-septic condition. These purposes are carried out by means of a receptacle especially designed with the above-stated object in view, which receptacle, furthermore, enables the commercial distribution of bone-wax, which heretofore has not been procurable as an article of commerce because of lack of means for rendering and keeping it sterile and non-septic up to the time of its use in an operation. It has, therefore, in the past been necessary at the time of each operation for the surgeon or one of his assistants to mix a quantity of bone-wax under suitable non-septic conditions, the result being that sometimes its preparation was overlooked or that a sufficient quantity was not at hand or that, on account of an unexpected delay, it lost its non-septic and sterile character and had become infected before application to the place where it was used. By means of the present invention, any quantity of sterile and non-septic bone-wax is right at the hand of the surgeon at any time without even forethought or the work of preparing it, and by means of this invention the supply of bone-wax is maintained in an entirely non-septic and sterile condition up to the very moment of its use. Moreover, this invention enables its commercial distribution and adds it in the best and most desirable form to the armamentarium of easily obtainable aids in the surgeon's work.

Bone-wax is a preparation devised by Sir Victor Horsley to prevent capillary bleeding from bones laid bare during a surgical operation. For instance, in an operation upon the head, sometimes the scalp is laid back from the bones surrounding the particular spot where the operation is to take

place. The capillaries in all the bone tissue will then bleed. The application of bone-wax, however, to the bones will stop the bleeding from the capillaries. It is for this purpose that bone-wax is used, as it prevents loss of blood to the subject of the operation and interference with the operator's work. The formula of bone-wax is well known. It consists of seven parts of purified beeswax, one part almond oil, and one part salicylic acid.

In the accompanying drawings forming part of this specification, like numbers of reference denote like parts wherever they occur, and Figure 1 is a perspective view of my prepared package; Fig. 2 is a sectional view on the line 2—2, Fig. 1; Fig. 3 is a perspective view of the blank from which the outer casing of my prepared package is formed; Fig. 4 is a perspective view of the bone-wax holder as found within the outer casing; and Fig. 5 is a perspective view of the holder or tube of bone-wax showing the wax protruding from the holder after the latter has been squeezed between the thumb and finger of the surgeon.

The bone-wax 1 is filled to any desired height within the collapsible metal tube 2 so that by pressure at 3 between the thumb and finger the wax will exude from said tube. The tube 2 with its contents is then placed in the glass tube 4 having one closed end 5 and the open end 6. The open end 6 is then subjected to a fusing flame or other sealing means with the result that the end 6 of Fig. 3 becomes the end 7 of Fig. 1, by which means the wax contained in the collapsible metal tube is hermetically sealed within the glass tube 4.

The glass tube 4 and the metal tube 2 contained therein together with the bone-wax forming the contents of tube 2 is then subjected to sterilizing temperature—*e. g.*, three hundred and fifty degrees (350°) Fahrenheit, more or less, for a sufficient period of time to sterilize thoroughly the inside of the glass tube 4 and its contents including the bone-wax. In this compact, convenient, and internally-sterilized form the tubes 2 containing bone-wax can be commercially distributed all over the world, the contents keeping for an indefinite period, at all times in a state of perfect steri-

lization and ready instantly upon breaking the glass tube 4 on the indented line 8 to be applied in non-septic and sterile condition to the exposed bone. The line 8 is preferably formed by grinding in the glass, thus weakening the glass at that particular point and making it easy to break the glass tube 4 and abstract the tube 2 containing the bone-wax 1 therefrom. The tube 2 is preferably made of block tin or similar non-poisonous material that will yield easily to pressure between the thumb and finger, thus being adapted readily to express the wax therefrom when pressure is applied near its closed end 9, as, for instance, at 3.

If desired, a non-printed label or identification device of the perforated kind described in my Patent No. 846,586, dated March 12, 1907, may be inserted within the glass tube 4 above the metal tube 2 prior to closing the end 7.

In use the surgeon first exposes the bone. He then quickly breaks a glass tube 4 on the line 8, his hands being in the condition of what is known as surgically clean. He then takes the tube 2 containing the wax 1 out of the lower part of glass tube 4, squeezes it at 3, and with an implement or one of the fingers of his other hand applies the wax 1 at the proper place on the patient.

It is preferred not to fill the tube 2 with bone-wax, but to leave it far enough down to avoid any possible contaminating contact after breaking the tube 4. While preferably the bone-wax will not be filled in the tube 2 higher than the line 10 or thereabout, yet I do not limit myself thereto. In case it is desired to do so, the end of tube 2 opposite the end 9 may be suitably closed, but this is unnecessary and deprives the package as a whole of some of its convenience.

It has been proposed by myself to pack bone-wax merely in a hermetically sealed glass tube, but without the use of the internal bone-wax holder 2. There would then be no means of removing the bone-wax

from the remnants of the glass tube. To obviate this difficulty I had myself thought of inserting an implement resembling a nail having a round head in the tube and, after causing the head thereof of a circumference approximating the interior circumference of the glass tube 4 to reach to a point close to the end 5 of the tube 4, introducing the bone-wax into the tube 4 and thus allowing the head of the implement to underlie the body of bone-wax, with the object of pulling the body of bone-wax out by means of said head, the other end of the implement being taken hold of by the fingers. On trial I have found, however, that the adhesive character of the bone-wax prevents the withdrawal of the bone-wax by such method when the head of same approximates in circumference the interior circumference of the glass tube 4. On the other hand, if the head of the implement is smaller, it pulls through the wax without abstracting any material part of same.

I claim:

A bone-wax package which consists of a glass outer casing sealed at both of its ends, and a compressible tube of substantially uniform diameter throughout containing bone-wax loosely placed in said outer casing, said tube having its base end closed and its outer end open, said outer casing having a transverse line of weakening that is located substantially central of the length of said casing, the surface of the bone-wax contained in said tube being located below the outer open end thereof whereby said outer end of the tube projects beyond the surface of the bone-wax and prevents contact of the bone-wax with the adjacent end of the casing, said tube being of considerably less length than that of the casing.

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

CLARENCE DE WITT LUKENS.

Witnesses:

GEORGE G. ANDERSON,
GLADYS WALTON.