No. 621,573. Patented Mar. 21, 1899.

T. Y. KINNE.

COMPRESSIBLE TUBE.

(Application filed June 18, 1898.)

(No Model.)

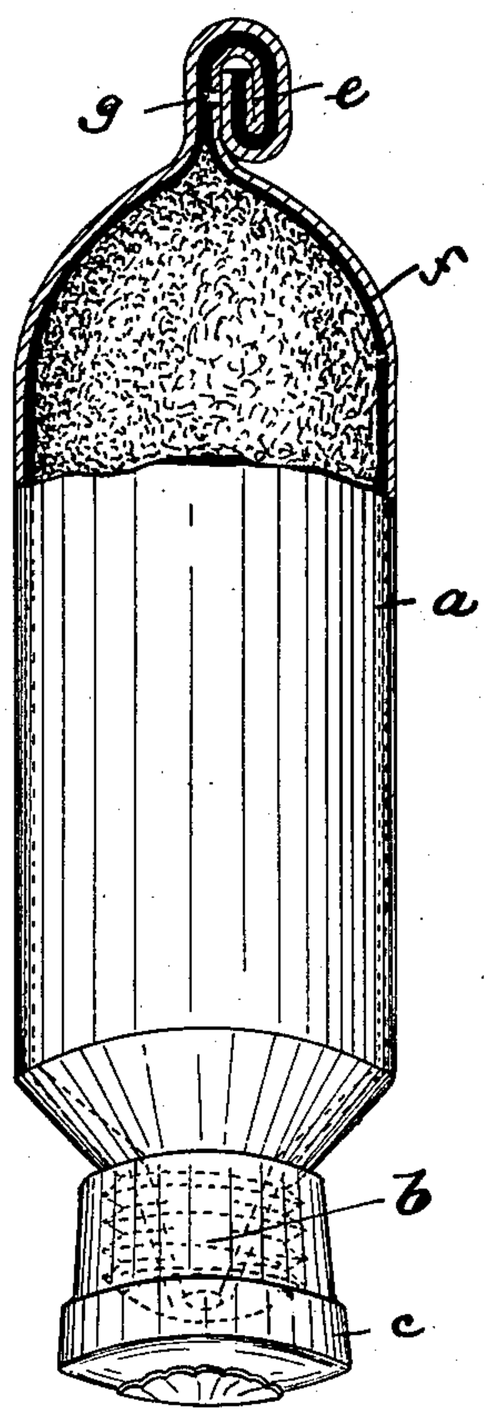

Fig. 1.

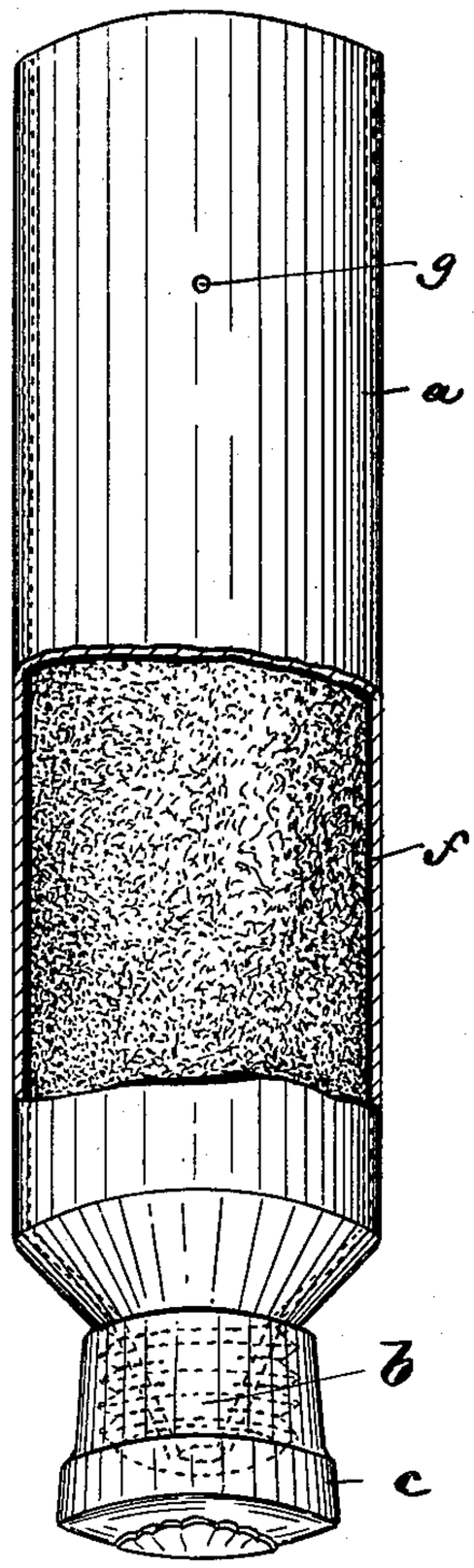

Fig. 2.

WITNESSES:

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UNITED STATES PATENT OFFICE.

THEODORE Y. KINNE, OF PATERSON, NEW JERSEY.

COMPRESSIBLE TUBE.

SPECIFICATION forming part of Letters Patent No. 621,573, dated March 21, 1899.

Application filed June 18, 1898. Serial No. 683,877. (No model.)

To all whom it may concern:

Be it known that I, THEODORE Y. KINNE, a citizen of the United States, residing in Paterson, county of Passaic, and State of New Jersey, have invented certain new and useful Improvements in Compressible Tubes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to improvements in compressible tubes made of ductile and impervious metal and which are usually provided with small discharge-outlets adapted to be closed by screw-threaded caps and have their opposite ends folded and pressed together. Whenever the contents of said tubes is to be discharged, (after the screw-threaded caps have been removed,) the opposite or folded ends are compressed. These tubes are generally used for paints, dentifrices, surgical dressings, &c., and especially when used for surgical dressings are sterilized, together with said dressing, so as to render said dressing perfectly antiseptic to thus obviate the danger of inoculating diseases to patients treated with it or to persons handling the same.

There are a number of surgical dressings or preparations which contain various salts of metals—such as, for instance, salts of mercury—and it is an established fact that such preparations are being quickly decomposed when put up in such compressible tubes, (generally made of lead or analogous ductile metals, compositions, or alloys,) and accordingly such dressings or preparations have to be put up in porcelain or glass jars or wooden boxes.

The object of this invention is to overcome the objections above referred to and to provide a compressible tube for the reception of surgical dressings, &c., and by the use of which the said surgical dressing cannot be affected or decomposed by the metal or alloy of which the said tube is made.

The invention consists in the improved compressible tube having its interior wall or surface coated with a preparation indifferent to the action of the metal or alloy of which the tube is made and also indifferent to the action of the preparation or dressing contained in said tube, substantially as will be hereinafter more fully described and finally embodied in the clauses of the claim.

Figure 1 is a side elevation of my improved compressible tube closed and partly in section; and Fig. 2, a front elevation of Fig. 1, the inlet end being unfolded.

The tube *a* is provided at one end with a small discharge-outlet *b*, adapted to be covered by an internally-screw-threaded cap *c*, while its opposite end is adapted to be pressed and folded together, as at *e*, all of the usual and well-known construction.

The interior wall or surface of the tube *a* is provided with a thin layer or coating *f*, which coating consists of collodion to which has been added a small quantity of castor-oil and balsam fir.

The collodion is prepared by mixing one-half gallon of ether with one-half gallon of alcohol and adding four and one-half ounces of pyroxylin. To one gallon of said collodion is added from two to three per cent. castor-oil and from one to two per cent. balsam fir.

For the purpose of coating the tubes the same are slightly heated and while warm are filled with the solution above referred to, which after remaining in said tubes a short time is poured out. A certain amount of the solution adheres to the interior surface of the tubes and after the ether and alcohol has evaporated forms a thin layer or coating which is impervious and indifferent to the action of the metal of which the tubes are made and also indifferent to the various surgical dressings, &c., placed in said tubes. It must be remarked that the said coating is nicely adapted in every particular to the purpose for which it is intended, being ductile, pliable, or flexible with and adhesive to the surface of the tube, so as to easily bend with the latter without cracking or breaking and without being detached from or blistered on said surface and being practically unaffected by the temperature which is necessary in the process of sterilization.

For the purpose of completely expelling the air from the interior of the tube when the latter is being filled and the open end closed or folded a small pin-hole *g* is provided for in the wall of the tube, near its open end, and after said open end is closed—that is to say, is compressed and folded together—the air

which still may have remained in the tube is discharged through said small pin-hole, and the latter is then afterward closed by the folded or compressed portion of the tube.

I do not intend to limit myself to the coating solution above described, as other solutions may be used advantageously to separate the dressing or preparation from its retaining-tubes; but

What I claim as new, and desire to secure by Letters Patent, is—

1. A compressible tube composed of ductile and impervious metal having its interior surface or wall provided with a flexible or pliable coating or lining and having near its inlet-opening a pin-hole or vent, substantially as described.

2. A compressible tube of ductile and impervious metal having its interior surface coated with a solution of collodion, castor-oil and balsam-fir, and provided near its inlet-opening with a vent or pin-hole, substantially as and for the purposes described.

3. A compressible tube of ductile and impervious metal provided near its inlet-opening with a vent or pin-hole, substantially as and for the purposes described.

In testimony that I claim the foregoing I have hereunto set my hand this 24th day of May, 1898.

THEODORE Y. KINNE.

Witnesses:
ALFRED GARTNER,
WM. D. BELL.