No. 610,355. Patented Sept. 6, 1898.

# T. Y. KINNE & A. GARTNER.

## COMPRESSIBLE TUBE.

(Application filed May 31, 1898.)

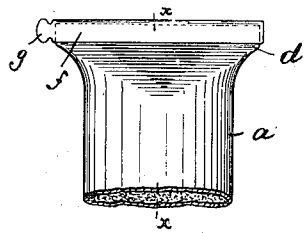



Fig. 2.

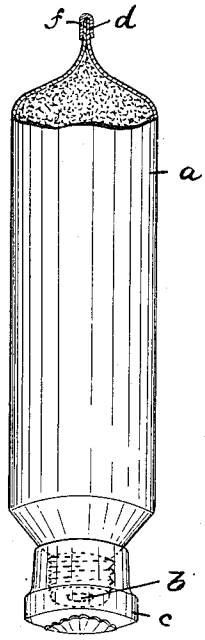



Fig. 1.

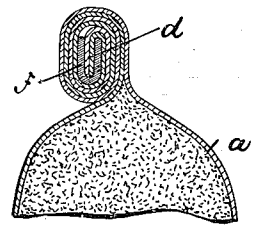



Fig. 3.

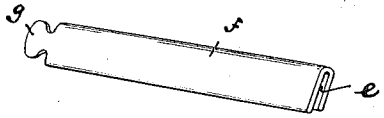



Fig. 4.

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# UNITED STATES PATENT OFFICE.

THEODORE Y. KINNE AND ALFRED GARTNER, OF PATERSON, NEW JERSEY.

## COMPRESSIBLE TUBE.

SPECIFICATION forming part of Letters Patent No. 610,355, dated September 6, 1898.

Application filed May 31, 1898. Serial No. 682,221. (No model.)

*To all whom it may concern:*

Be it known that we, THEODORE Y. KINNE and ALFRED GARTNER, citizens 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 we 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in compressible tubes or receptacles made of impervious ductile material and which are generally used for paints, dentifrices, surgical dressings, &c. Said tubes are usually provided with small discharge-outlets adapted to be closed by screw-threaded caps and having their opposite ends folded and pressed together or coiled and folded around a key or clamp for conveniently expunging the contents of said tubes. Various forms of clamps or keys for the last-mentioned purpose have been designed, but none of them rendered said folded ends of the tubes perfectly air-tight.

The object of our present invention is to provide a cap for hermetically closing the flattened ends of the tubes and at the same time to act as means for progressively folding and compressing said tubes for the purpose of discharging their contents.

The invention consists in the improved compressible tubes, combining a cap or hood for hermetically closing and folding the flattened end of said tube, substantially as will be hereinafter more fully described, and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several views, Figure 1 is a side elevation of a compressible tube, partly in section, and provided with our improvement; Fig. 2, a front elevation of the upper portion of Fig. 1; Fig. 3, an enlarged detail sectional view on the line $x$ $x$ of Fig. 2, and Fig. 4 an enlarged detail perspective view of the cap or hood used in connection with the tube.

In said drawings, $a$ represents a cylindrical tube or receptacle, made of impervious ductile material and provided at one end with a small discharge-outlet $b$, adapted to be engaged by a screw-threaded cap $c$, all of the usual and well-known construction. The opposite end of said cylindrical tube or receptacle is pressed together or flattened, as at $d$, Figs. 1 and 2, and is surmounted by and arranged within an elongated groove $e$ of the cap or hood $f$, which latter is provided at one end (or both ends) with a projection or handle $g$, as clearly illustrated in Fig. 4. Said cap or hood is securely clamped upon the flattened end of the tube, with its members each side of the bend in laminated arrangement therewith, whereby a perfect air-tight joint is obtained. To prevent a reopening of said flattened end of the tube, the cap or hood is turned once or twice around, together with said flattened end, as clearly illustrated in the sectional view in Fig. 3. The extreme edge of the flattened portion bears against the inner surface of the top portion of the cap or hood.

When it is desired to expunge a portion of the contents of the tube, the screw-threaded cap is removed and the cap or hood, acting as a key or clamp, is turned or rotated, by which operation the portion of the tube adjacent to said cap gradually becomes flattened and is coiled around said cap, as will be manifest. By this operation it is impossible to have the contents of the tube reënter the once folded or compressed portion and to discharge through the flattened end of said tube.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination of a compressible tube having means for closing one of its ends and having its other end flattened and compressed together, and a combined key and hermetical closure for the last-named end consisting of a metallic plate bent lengthwise upon itself to form substantially laminated members and clamped upon said end, and a handle inte-

grally formed with and extending from one or both ends of one of said members, substantially as described.

2. The combination of a compressible tube having means for closing one of its ends and having its other end flattened or compressed together, and a combined key and hermetical closure consisting of a metallic plate bent lengthwise upon itself and clamped upon, and having its members in laminated arrangement with, said compressed end of the tube, the edge of said compressed end being uniformly in substantial contact with the inside of said closure at the bend therein, and a handle integral with and projecting from one or both ends of one of said members, substantially as described.

In testimony that we claim the foregoing we have hereunto set our hands this 13th day of May, 1898.

THEODORE Y. KINNE.
ALFRED GARTNER.

Witnesses:
LOUISE SMYDER,
WM. D. BELL.