

J. A. SYMONDS.

COLLAPSIBLE TUBE OR PACKAGE FOR MUCILAGE.

No. 514,290.

Patented Feb. 6, 1894.



Fig. 1.

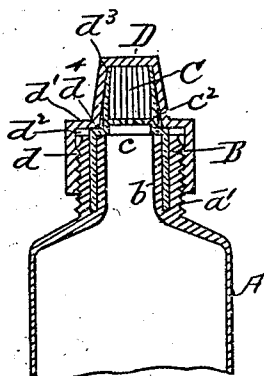


Fig. 2.



Fig. 3.

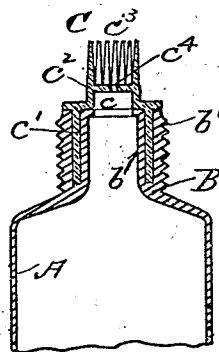


Fig. 5.



Fig. 4.

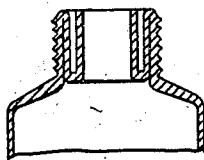


Fig. 6.

WITNESSES

J. H. Cummings.
J. M. Dole.

INVENTOR

Joseph A. Symonds
by his Attorney
Charles E. Raymond

C - Just
B -
A -

UNITED STATES PATENT OFFICE.

JOSEPH A. SYMONDS, OF NEWTON, MASSACHUSETTS.

COLLAPSIBLE TUBE OR PACKAGE FOR MUCILAGE.

SPECIFICATION forming part of Letters Patent No. 514,290, dated February 6, 1894.

Application filed May 15, 1893. Serial No. 474,366. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH A. SYMONDS, a citizen of the United States, residing at Newton, in the county of Middlesex, in the State of Massachusetts, have invented a new and useful Improvement in Collapsible Tubes or Packages for Holding and Applying Mucilage, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention relates to a tube or package of flexible metal or similar material, commonly known as a collapsible tube, and at one end of which is a head having an opening through which the contents of the tube or package may be forced by pressure, and which end is covered by an applying device or brush into which the contents of the tube or package is forced and by means of which it is delivered and spread.

The invention relates to the package or tube thus provided with an applying brush or device as a whole and to various details of manufacture, all of which will hereinafter be fully described.

Figure 1 is a view in elevation of my improvement. Fig. 2 is a view in section of the head end thereof showing the brush or applying device in the manner in which it is secured to the neck of the tube or package and its cover. Fig. 3 is a view in elevation of the applying device. Fig. 4 is a view of the same in plan. Figs. 5 and 6 are views in section of the head illustrating slight modifications.

A represents the collapsible section of the tube or package. It is made preferably of metal of the usual kind employed in making such packages and it is of the usual shape of such packages or tubes, and the end A is sealed or closed by being flattened and folded or turned upon itself. The other end *a'* is closed by the head B to which the edge of the tube or package is united, or which may be integral therewith, and which has a neck *b'* formed to receive and hold applying device or brush C, a screw thread *b'* to receive and hold a closing cap D, and an outlet hole *c*, by means of which the contents of the tube are fed to the brush or applying device. I pre-

fer to use for the latter a brush formed of india-rubber having a cylindrical section or petticoat *c'*, a perforated diaphragm *c''*, and outwardly extending isolated teeth or projections *c'''*, preferably having a circular arrangement around the perforation *c''*, and also preferably somewhat conical or tapered, but not necessarily so.

The neck *b* of the package has formed in it a cylindrical recess *b'*, which preferably is formed by striking up or spinning or bending inward or outward a section of the blank from which it is made. The screw thread may be stamped into the neck. The recess *b'* is of a size to receive the cylindrical section *c* of the brush, which, when inserted therein, is fastened in place by setting the inner section *b''* of the neck tightly against it to clamp it in the recess. As the end *a* of the tube remains open until it receives its contents the neck section *b''* may be expanded upon the cylindrical petticoat *c'*, of the brush by any convenient form of expanding tool inserted through the open end. The opening *c* in the cap is partially covered by the diaphragm *c''*, the size of the hole *c'* in which may be varied as desired. I prefer to employ a cap of peculiar form for covering the brush and prevent the escape of the contents of the package. It is provided with a screw thread *d* to screw onto the threaded section of the cap, a shoulder *d'* to bear against the part *d''* of the neck or a flange of the brush extended on this section of the cap (see Fig. 5) whereby the cap will seat itself when screwed to place upon the neck or flange and relieve the screw threads from strain. The cap also has the conical cavity *d'''* which acts to close the brush into a conical shape when screwed thereon bringing the teeth or section *c'''* closely together and causing the brush to act as a closing device in keeping the mucilage or other substance in the package. The cap also has a cavity or enlargement *d''''* to cover a space into which the substance upon the brush might be forced in the act of applying the cap, (see Fig. 2.)

The package or tube preferably is filled from its end *a* and the end then closed as above stated. I would say that I do not confine myself to the particular form of brush or

applying device above specified, nor to the peculiar means described for attaching it to the head of the tube.

In use, the cap being removed, pressure is applied preferably to the end *a* of the collapsible tube or package, and its contents forced through the feeding hole *c* to the brush and applied or spread by it as desired. As the contents of the package or tube are used the tube or package preferably is shortened by continuing the folding of its end *a*.

I wish it to be understood that the package or tube is not confined to the holding and applying of mucilage but may be employed in holding and applying any other liquid or liquid composition.

It will be understood that the collapsible tube not only affords a desirable means for forcing the mucilage from its cavity by gradually shortening the same, as above specified, but that as it does not expand after the mucilage has been so forced from it, no air chamber is formed in the tube, as the mucilage is used, and therefore, the mucilage is kept from contact with the air and is therefore maintained in a sweeter and better condition than if air is allowed to come into contact with it.

Having thus fully described my invention,

I claim and desire to secure by Letters Patent of the United States—

1. The collapsible case or tube *A*, having the head *B*, provided with a neck *b*², a recess *b'* and a brush or applying device having a netting or section *c'* which enters the recess *b'* and is held therein by shutting or closing one wall of the recess toward the other, to thereby clamp the said brush section in said recess, as and for the purposes described.

2. The combination in a collapsible tube or package of the case or shell, having the head *B* provided with the neck *b*² with the brush *C* having the perforated diaphragm *c*², and the brush section *c'* united by the section *c'* to the neck, substantially as described.

3. The combination of a collapsible case or shell *A*, of the character specified having the head *B* provided with a neck having the screw thread *d* and a brush or applying device secured to the neck with a cap *D* having a conical recess to form and hold the brush in a conical shape when applied to the neck, as and for the purposes described.

JOSEPH A. SYMONDS.

Witnesses:

F. F. RAYMOND, 2d,
J. M. DOLAN.