(Model.)

T. MARSHALL.

NURSING BOTTLE TUBE CLEANER.

No. 265,842. Patented Oct. 10, 1882.

Fig. 1.

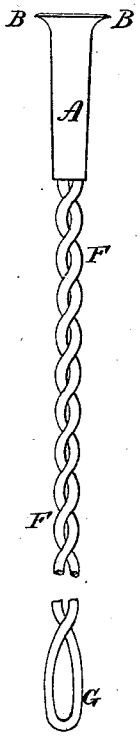


Fig. 3.

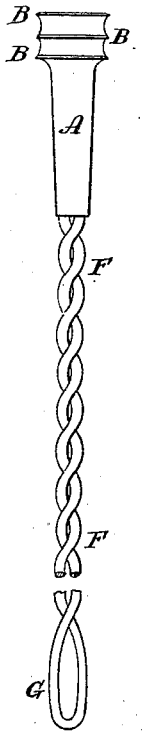


Fig. 4.

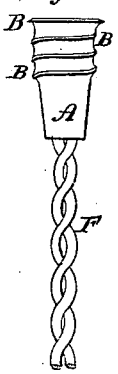


Fig. 5.

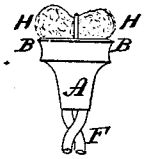


Fig. 6.

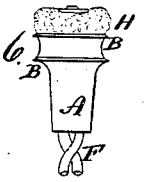


Fig. 7.

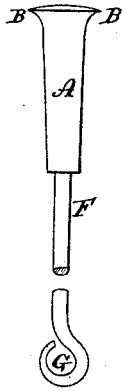
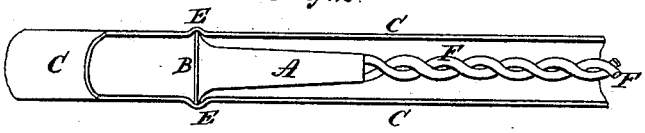


Fig. 2.



Witnesses.

Albert H. Norris.

Robert Emett.

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Atty.

UNITED STATES PATENT OFFICE.

THOMAS MARSHALL, OF EAST GREENWICH, LONDON, ENGLAND.

NURSING-BOTTLE-TUBE CLEANER.

SPECIFICATION forming part of Letters Patent No. 265,842, dated October 10, 1882.

Application filed June 27, 1882. (Model.) Patented in England March 10, 1882, No. 1,165; in France June 8, 1882, and in Belgium June 10, 1882.

To all whom it may concern:

Be it known that I, THOMAS MARSHALL, a subject of the Queen of Great Britain, residing at East Greenwich, London, England, have invented a new and useful improved appliance to facilitate cleansing the inside surface of flexible and elastic tubes used with feeding-bottles, (for which I have obtained patents in the following countries: Great Britain, No. 1,165, bearing date March 10, 1882; France, bearing date June 8, 1882; Belgium, bearing date June 10, 1882,) of which the following is a specification.

This invention has for its object to provide an improved device or instrument for cleaning the flexible tubes of infants' nursing-bottles. A serious objection to the bottles of this class arises from the fact that the interior of the tube becomes coated with a tenacious covering of caseine, which is insoluble in water, and can only be removed with great difficulty by mechanical means. Brushes of various descriptions have been employed for this purpose, but have proved impracticable, for the reason that the bristles or wire of the same would not act successfully in thoroughly removing the caseine from the tube. Experience has proven that the tough, tenacious coating of caseine can only be removed by positive force, which requires an instrument constructed with a scraping or denuding edge and so constructed as to withstand the required strain in order to scrape off the coating, and at the same time possess sufficient flexibility to be passed through the flexible tube.

To this end my invention consists in a flexible shank, preferably of twisted wire, having secured at one end a solid seamless tube, having formed thereon and integral therewith a head having a suitable denuding-edge, the said tube being stamped or spun upon the end or ends of the shank, so as to securely hold it thereon, as more fully hereinafter specified.

In the drawings, Figure 1 represents a sectional view of the flexible tube, showing the means of using my improved device; and Figs. 2, 3, 4, 5, and 6 show elevations of modifications of my device.

The letter A indicates a seamless tube of metal, having formed integral therewith a head, B, by spinning, stamping, or upsetting the metal at the closed end of the tube in the manner well known to metal-workers.

The letter F indicates the shank of the instrument, constructed of flexible material. This is constructed preferably of two or more twisted wires, the portions G of which are looped, as indicated, and the free ends of which are inserted in the seamless tube, which is forced well home, the ends diverging or extending laterally, and the tube being securely fastened upon the shank by stamping or spinning, flattening the upper end of the tube down upon the wire, so as to form a head with a scraping or denuding edge, as shown.

In the modification shown in Fig. 2 of the drawings the tube is formed with two or more scraping-edges, and in Fig. 3 the edges are formed in the shape of a screw-thread.

In the modifications shown in Figs. 4 and 5 the tube is represented as having a sponge or other absorbent material attached to the head to wipe out the interior of the elastic tube after the removal of the caseine coating.

In Fig. 6 the device is represented as having a shank composed of a single wire. In this instance the end of the wire setting in the tube is turned laterally, so as to be clamped at the head of the tube when the same is stamped, spun, or upset.

The operation of my invention is clearly indicated in Fig. 1 of the drawings, in which the letter C indicates the flexible tube to be cleansed.

The instrument is preferably of such proportions that the denuding-edge of the tubular part will be somewhat greater in diameter than the said tube, so as to act with some force when being drawn through said tube and insure the perfect removal of the internal coating.

The instrument is used by passing the shank through the tube and then drawing the whole through the tube.

The instrument will of course vary in size according to the diameter of the flexible tube to be cleaned, so that the denuding-head will in every case be of sufficient diameter to thoroughly and efficiently scrape the interior of the flexible tube.

I am aware that lamp-chimney cleaners have been provided with disks carrying a wiper; but in such the disks lack a sharp edge, and there-

fore cannot perform the office of my peculiarly-constructed device.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. An instrument for cleaning the elastic tubes of infants' nursing-bottles, consisting of a flexible shank provided at one end with a seamless metallic tube, having formed integral therewith a suitable head, which head and tube is secured to the shank by stamping, upsetting, or spinning, and which is provided with a denuding-edge, B, for removing the coating from the interior of the flexible tube, substantially as specified.

2. An instrument for cleaning the elastic tubes of infants' nursing-bottles, consisting of a flexible shank provided at one end with a seamless metallic tube, having formed integral therewith a suitable head carrying a wiper, H, which head and tube is secured to the shank by stamping, upsetting, or spinning, and which is provided with a sharp denuding-edge, B, for removing the coating from the interior of the flexible tube, substantially as specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

THOMAS MARSHALL.

Witnesses:

RICHARD CORE GARDNER,

CHARLES ALFRED GROSSETETE.