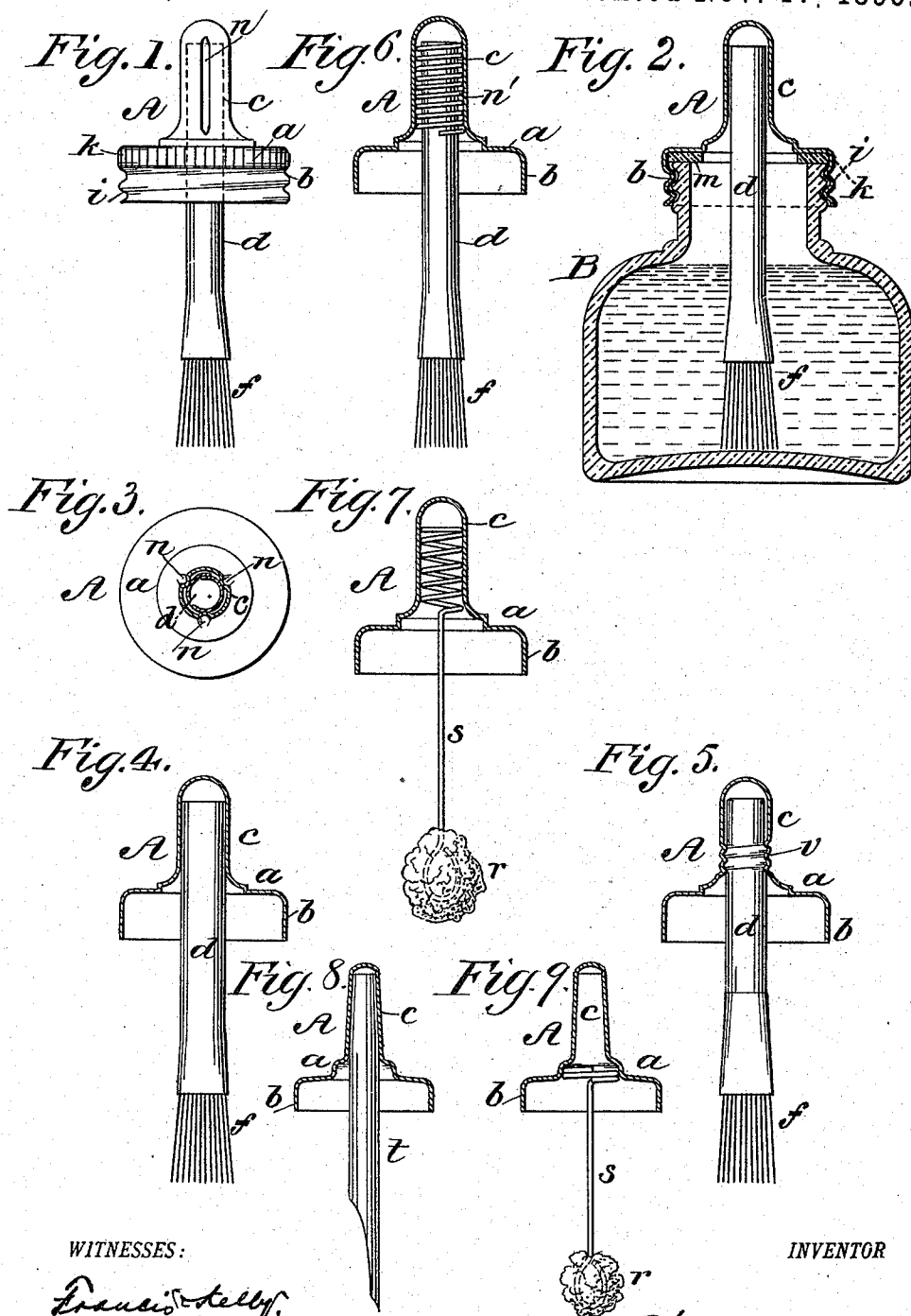


(No Model.)

C. M. HIGGINS.
BOTTLE CAP AND BRUSH.

No. 571,367.

Patented Nov. 17, 1896.



WITNESSES:

Francis Kelly.
Henrietta K. Nicolai.

INVENTOR

Chas. M. Higgins.

UNITED STATES PATENT OFFICE.

CHARLES M. HIGGINS, OF BROOKLYN, NEW YORK.

BOTTLE CAP AND BRUSH.

SPECIFICATION forming part of Letters Patent No. 571,367, dated November 17, 1896.

Application filed July 20, 1895. Serial No. 556,658. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. HIGGINS, of Brooklyn, Kings county, New York, have invented certain new and useful Improvements in Bottle-Caps and Brushes, of which the following is a specification.

The object of my invention is to provide a cap and brush for bottles of mucilage, ink, and other materials, which shall present a very finished appearance, shall tightly seal the mouth of the bottle when in place and yet admit the ready use and distribution of the mucilage or ink when required, and at the same time be very strong and light and inexpensive in construction. To this end I strike or press up the cap in dies in one piece of thin or sheet metal, with a screw-threaded rim to screw upon the neck of the bottle and with a tubular shank projecting from the center of the cap and integral therewith, and I socket the stem of the brush within the tubular handle-shank of the cap, thus producing a very simple and efficient cap and brush having no seams, perforations, or joints on its exterior to leak or loosen.

My invention therefore consists mainly in the feature here outlined, and also embodies some minor features, as hereinafter fully set forth and claimed.

In the drawings, Figure 1 is a side elevation of my improved bottle-cap and brush; Fig. 2, a vertical sectional view of the same applied to a bottle. Fig. 3 is a horizontal sectional view through the upper or handle portion of the cap shown in Fig. 1; Fig. 4, a vertical sectional view of the plain rim-cap; Fig. 5, a similar view showing a modification of the brush-retaining means; Figs. 6, 7, 8, and 9, similar views illustrating further modifications hereinafter specifically described.

In the drawings, A represents my improved bottle-cap and brush-handle, which, as shown best in the sectional view, Fig. 2, is stamped, drawn, or pressed up in dies from one integral piece of metal, preferably sheet-brass, thus forming the top *a*, the rim *b*, and the handle *c* in one integral piece without joints or seams. The stem or handle *c* projects centrally from the top *b* and is preferably straight or cylindrical, with a flaring base where it joins the top *b* and with a hemispherical or rounded tip. Within the tubular

stem *c* is socketed the tube or stem *d* of the brush *f*, where it is securely held by a tight frictional fit by soldering or other means. This stem *d* of the brush is preferably made of a tube of sheet metal (see Figs. 2 and 3) pinched or flattened at the lower end to hold the bristles *f*, as is the usual construction in cheap brushes.

It will be seen that the straight cylindrical form of the tubular handle-shank *c* is not only neat in appearance, easily formed by dies, and is also convenient to grasp in the fingers, but it also admits of the easy and secure socketing of the straight stem *d* of the brush therein, which latter advantage would not exist if the form of the socket *c* were tapering.

The rim *b* of the cap is preferably formed with a screw-thread *i*, rolled, pressed, or spun thereon, and also with a knurled edge *k*, (see Figs. 1 and 2,) whereby the cap may be readily screwed on the neck of a correspondingly-threaded bottle B, as seen in Fig. 2, an interposed washer *m* of rubber or other material forming a water-tight joint.

It will therefore now be appreciated that by the described construction a very strong and simple, neat, and inexpensive bottle-cap and brush is produced, admirably adapted for ordinary bottles of mucilage, ink, and other materials. When the cap is screwed in place, as seen in Fig. 2, the bottle is securely sealed, with the brush in place ready for use, and no corkage or other seal or closure is required when the bottles thus equipped are packed in cases for stock or transportation. The use of corks is thus dispensed with and a great saving thereby effected, as the cost of a simple washer *m* of rubber or waxed paper is far less than that of the cheapest corks. At the same time the bottle may be readily opened for use by simply unscrewing the cap, which is a much simpler operation than the removal of tight-fitting corks. It will be further noted that not only is this construction economical, but is very strong, neat, and attractive, as when the cap is screwed in place there are no seams or joints in the cap to allow possible leaks, or to possibly loosen in subsequent manipulation of the cap or handle, as would be likely to happen if the cap were made in two or more pieces jointed, soldered, or seamed together. It will be noted that by reason of

the stem *d* of the brush being socketed up within the tubular shank or handle-shank *c* of the cap, a double thickness of material thus exists at this point, which renders the handle of the cap extremely strong and rigid and not possible to be bent or broken off by lateral flexions or compressions, although made of very thin sheet metal. The curved and imperforate tip of the handle-shank *c* covers the open end of the brush-stem *d*, and this seals over the same internally, thus making a tight joint and forming a finished tip or terminal on the brush without any external seams or joints to offend the eye or admit of leaks or subsequent looseness, as will be understood from the drawings.

I have shown in Figs. 1 and 3 the shank or handle *c* of the cap formed with three inward flutes, ribs, or corrugations *n*, between which the tubular stem of the brush is tightly socketed and thus held frictionally at three points. This allows the handle-shank *c* of the cap to be considerably larger than the stem *d*, which is desirable for economical reasons, and yet holds the smaller brush-stem securely within the larger handle-stem, as will be readily appreciated. In lieu of this construction a wire spiral *n'* may be interposed between the two parts, as shown in Fig. 6, and the parts may be held by friction or by soldering, the coils of the wire spiral acting the same as the ribs *n* in Figs. 1 and 3. The stem of the brush may, however, be made of wood or sheet metal of the full size of the interior of the handle-stem *c*, socketed directly in the latter, as seen in Fig. 4; or, as shown in Fig. 5, a screw-thread *v* may be rolled on the handle-stem *c* for a short distance, and the stem *d* of the brush, made of wood or other material, may be screwed into the same, the threads on the metal stem *c* embedding themselves in the soft wood and thus securely engaging the parts. It will be noted that the thread or spiral groove *v* in Fig. 5 is merely a lateral or spiral variation of the ribs or corrugations *n* in Fig. 1, and will serve the same purpose if the smooth stem *d* in Figs. 1 and 3, or in Fig. 6, is socketed within the same, so that hence the ribs *n* or *v* or spiral *n'* are simply mechanical equivalents of each other.

It is not, of course, necessary that the cap be made with the screw-threaded rim, as it may be plain to slip on and off the bottle-neck, as seen in Figs. 4 and 5, but the advantage of dispensing with the ordinary corkage is gained by using the screw-thread, as in Fig. 2.

When I use the term "brush" I do not mean to limit myself to what is strictly, specifically, or commonly understood as a brush, as any equivalent for a brush capable of dip-

ping up and applying liquids, such as a swab, quill, or flat flexible blade, may be used. For example, Fig. 7 shows a swab or sponge *r* on the end of a wire *s*, whose spiral end is secured in the tubular shank *c*, and which will form a good substitute for a brush in applying mucilage, shoe-dressing, wood-stains, &c. In Fig. 8 I show a quill or tube *t*, secured in the shank *c* with the pointed or pen-shaped end adapted to dip into and lift up the ink, a form of my invention which is well adapted for bottles of drawing-ink.

It is not, of course, necessary that the brush or swab be secured actually within the tubular handle-shank of the cap, as the wire of the swab may be bent and soldered to the under side of the cap, as shown in Fig. 9.

When I speak of the cap being struck up in one piece of sheet metal, I do not mean to limit the construction absolutely to sheet metal, although this is preferable, as being stronger and cheaper, but the cap may also be struck up or molded in exactly the same form in celluloid or hard rubber or other suitable material, as will be readily understood.

I prefer to press or strike up the cap in the form described from thin sheet-brass, but it may also be made from britannia or similar metal pressed in dies in the usual manner of working such metals.

What I claim as my invention is—

1. A bottle cap or cover comprising a thin metallic body portion *a* provided with the knurled edge *k*, and the screw-threaded portion *b*, to encircle and cover the mouth of the bottle, and a straight tubular shank or handle *c* extending upwardly from the body portion and formed integral therewith, all substantially as shown and described.

2. A bottle cap or cover comprising a thin metallic body portion *a* provided with the knurled edge *k*, and the screw-threaded portion *b*, to encircle and cover the mouth of the bottle; a straight tubular shank or handle *c* extending upwardly from the body portion and formed integral therewith; and a brush or its equivalent secured within the handle and projecting from the under face of the cap, all substantially as shown and described.

3. The combination with the cap *A* formed with the tubular handle-shank *c* of a brush having its stem *d* socketed within said shank and of a smaller diameter than the same, and with the ribs *n*, or their equivalent, filling the space between the two and forming a tight frictional bearing between the shank and stem, substantially as shown and described.

CHAS. M. HIGGINS.

Witnesses:

JNO. E. GAVIN,
HENRIETTA H. NICOLAI.