No. 843,596. PATENTED FEB. 12, 1907.

C. A. FOGARTY.

SINK BRUSH.

APPLICATION FILED JUNE 8, 1906.

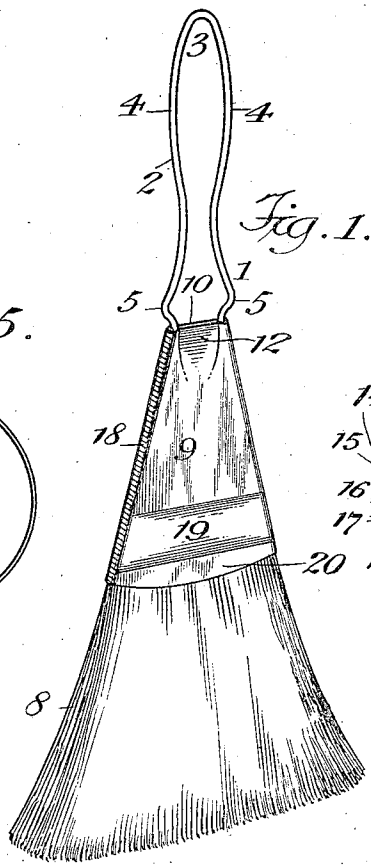


Fig. 1.

Fig. 5.

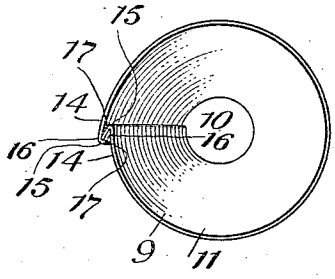
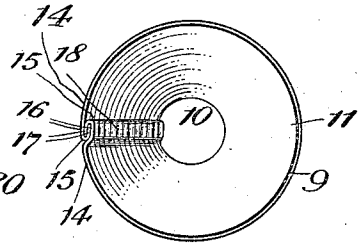


Fig. 6.



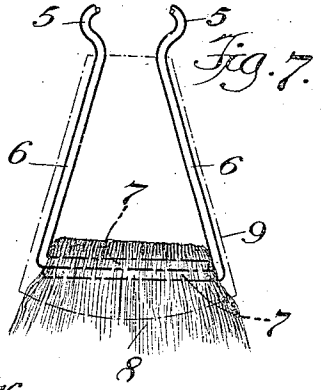
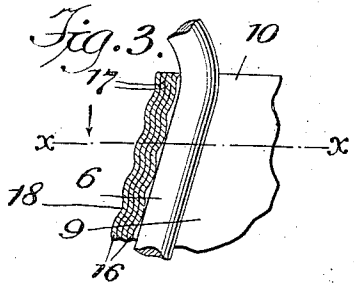


Fig. 7.

Fig. 3.



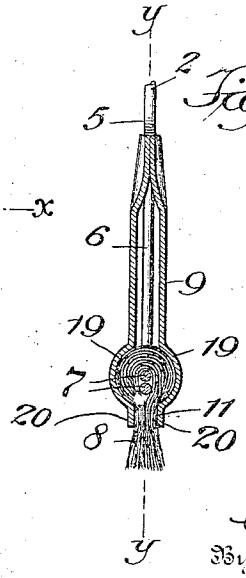


Fig. 2.

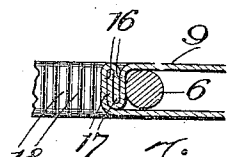


Fig. 4.

Witnesses
A. R. Appleman.
Bessie Overtyan,

Inventor
Charles Arthur Fogarty,
By his Attorneys
L. R. Lettell

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES ARTHUR FOGARTY, OF BROOKLYN, NEW YORK.

SINK-BRUSH.

No. 843,596. Specification of Letters Patent. Patented Feb. 12, 1907.

Application filed June 8, 1906. Serial No. 320,763.

To all whom it may concern:

Be it known that I, CHARLES ARTHUR FOGARTY, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Sink-Brushes, of which the following is a specification.

This invention relates to sink-brushes and brushes of analogous construction; and it has for its object to provide a simple and improved brush of this class which will possess advantages in point of strength and durability, the secure retention of the bristles, inexpensiveness and convenience in manufacture, and general efficiency.

A special object of my present invention and improvements is to provide a simple and effective construction of the sealing-jacket which is used in brushes of this class for retaining the bristles, in connection with the anchor portion by which the bristles are secured and for connecting the bristle portion with the handle portion, and to obviate the use of solder at connected joints of the sealing-jacket.

In the drawings, Figure 1 is a perspective view of a brush embodying my improvements. Fig. 2 is a vertical sectional view taken through the sealing-jacket and a part of the frame and bristles. Fig. 3 is a detail vertical sectional view taken on the vertical plane of the edge joint of the sealing-jacket. Fig. 4 is a detail horizontal sectional view taken on the line $x\,x$, Fig. 3. Fig. 5 is an end view of the sealing-jacket looking from the bottom, in its truncated conical form before its edge joint is secured. Fig. 6 is an end view of the sealing-jacket, looking from its bottom in its truncated conical form after the edge joint has been formed and before the jacket is mounted and compressed in association with the brush structure. Fig. 7 is a vertical sectional view taken on the line $y\,y$, Fig. 2.

Corresponding parts in all the figures are denoted by the same reference characters.

Referring to the drawings, 1 designates the frame of the brush, which also preferably forms the handle portion 2. This frame in the preferred construction herein illustrated comprises a single length of bent spring or resilient wire which is bowed centrally, as at 3, and extended downwardly at both sides of said centrally-bowed portion, as at 4, to form the handle or handle-retaining portion 2. The portions 4 are bowed outwardly at their lower ends, as at 5, to form means engaging the upper edge of the sealing-jacket to retain the latter in position, and from said bowed portions 5 the wire is divergently extended downwardly, as at 6, to form portions received within and engaging the opposite side or edge corners of the sealing-jacket, the lower ends of the portions 6 being turned inwardly in oppositely-projecting and parallel position, as at 7, to form the bristle-anchor. In relation to the preferred construction of handle and bristle-anchor as above described the bristles 8 are simply turned at their central portion so that they extend over and embrace the portions 7 of the bristle-anchor, as shown.

9 designates the improved sealing-jacket, which is one of the features of my present invention and improvements. The sealing-jacket consists of a plate, of tin or other suitable metal, and is initially of truncated conical formation and is of flattened approximately oval transverse contour when secured in finished position about the brush structure to seal the bristles in connection with the anchor portion. In practical manufacture the sealing-jacket 9 is passed over the handle portion 2 after the bristles are arranged in connection with the bristle-anchor and slipped beneath the locking projections formed by the bowed portions 5 by spring action of the frame, so that said locking projections operate to prevent upward movement of the sealing-jacket upon the brush-frame 1. The sealing-jacket is open at the top, as at 10, and open at the bottom, as at 11, and when in final completed condition and position incloses the bristle-anchor, and its lower portion incloses the upper portion of the bristles, as shown.

In practical construction the sealing-jacket is formed from a suitably-shaped blank of sheet metal, which is first bent into a truncated cone (see Figs. 5 and 6) having an open top and bottom, and the meeting edges of said blank at one side of the cone are secured together. In this shape and condition the cone is slipped downwardly over the handle portion and frame, as above mentioned, so that it incloses the bristle-anchor and the upper portion of the bristles. The cone is then flattened to the approximately oval transverse contour shown in Fig. 7 by means of

compression in a suitable press, so that it will bind upon the brush-frame and compress the upper portion of the bristles.

In the construction heretofore employed a rivet or pin has been passed transversely through the lower portion of the sealing-jacket and through the bristles beneath the bristle-anchor to retain the lower open end of the sealing-jacket in position around the upper portion of the bristles and prevent the displacement of the latter with relation to the bristle-anchor, and the upper portion of the sealing-jacket has been compressed or flattened at its top edge, as shown at 12, intermediately of the divergent side portions 6 of the wire frame to augment the locking connection between the sealing-jacket and frame. Heretofore the meeting edges of the truncated cone forming the sealing-jacket have been overlapped and secured by soldering, and this connected joint of the sealing-jacket comes at one of the inclined side edges or corners of the jacket when the latter is pressed into final position with relation to the frame and bristles. The soldered joint, as just explained, is disadvantageous in the construction and process of manufacture herein described for the reason that the pressing of the truncated cone after it is placed over the frame and bristles to form the sealing-jacket in its final operative condition and position is liable to break or open the soldered joint, the resistance of the joint formed in this manner not being sufficient against the compression of the cone.

In my present invention and improvements I provide a joint for the meeting ends of the sealing-jacket cone which not only obviates the use of solder, but produces a connection which will positively resist any tendency to breaking or opening of the joint when the jacket is compressed into final completed shape in the process of manufacture and which also operates to strengthen the sealing-jacket and render the same more rigid at the edge or side corner, which would otherwise be its weakest point. In carrying out the improvements just mentioned the meeting edges 14 14 of the sheet-metal blank forming the truncated cone are relatively reversely bent at an acute angle, as at 15, to form at each edge 14 two approximately parallel thicknesses of the metal, as at 16 and 17, and the outer portions 17 of said meeting edges 14 overlap and interlock, as shown, thus providing four thicknesses of metal at the overlapping and interlocking joint. Said joint portion is then crimped throughout its length from top to bottom by passing the cone through a suitable machine, the parallel alternately-reversed corrugations 18 being preferably pressed entirely through the joint and through the four thicknesses of metal at the joint and extending transversely with relation to the longitudinal plane of the joint. The overlapping, interlocked, and crimped joint thus formed provides a strong construction constituting a joint practically integral with the body of the sealing-jacket, which will by reason of its relative construction and arrangement resist any tendency to open or break under the compression of the sealing-jacket after the latter is placed over the frame and bristles, and it also provides great relative strength with four thicknesses of metal at the inclined side or edge corner of the completed jacket, which is the point of greatest strain when the brush is in use.

In the construction of the improved sealing-jacket under my present invention and with the interlocked and crimped joint as above described, the transverse rivet or pin heretofore employed at the bottom of the jacket can be dispensed with, and in lieu thereof the side walls of the sealing-jacket can be bulged or bowed, as at 19, around the bulge of the upper portion of the bristles, where they surround the bristle-anchor, so that the side walls of the sealing-jacket oppositely surround the bulging upper portion of the bristles and the cross-wires 7, constituting the bristle-anchor, and inclosed within the upper portion of the bristles, both above and below the plane of said anchor portions 7, whereby the bristles are firmly bound in connection with the anchor and effectively secured against displacement. This additional curvature of the sealing-jacket is formed by compression at the same time the jacket is compressed into the flattened approximately oval transverse contour of its completed condition and can be effectively formed without risk of weakening the strength of the jacket by reason of the strong joint which is provided, as above described. Beneath the bristle-retaining bowed or curved portion 19 the lower edges of the sides of the sealing-jacket may be relatively flattened or pressed into approximately straight edges, as at 20, to bear straight across the opposite sides of the upper portion of the bristles beneath the bristle-anchor, and thus operate by effective compression to more securely retain the bristles against displacement from the anchor.

The operation and advantages of my invention will be readily understood. A permanent edge joint of relatively great strength is provided for the sealing-jacket, which will not only resist the compression of the jacket into its final shape, but which embodies a permanently-locked joint, inasmuch as the interlocking edges engage each other in reverse directions and could only be separated by reversely moving the edge portions of the sealing-jacket sufficiently to permit release of said reversely-interlocking edges, and this movement of the edge portions of the jacket or release of said edges is precluded by reason of the fact that the edges are permanently locked by crimping through the four thick-

nesses of metal at the joint. The improved construction enables, furthermore, a more economical and rapid manufacture of the brushes and enhances the permanent structural characteristics of the brush and its general strength and durability when in use.

I do not desire to be understood as limiting myself to the detail construction and arrangement of parts as herein shown and described, as it is manifest that variations and modifications therein may be resorted to in the adaptation of my invention to varying conditions of use without departing from the spirit and scope of my invention and improvements. I therefore reserve the right to all such variations and modifications as properly fall within the scope of my invention and the terms of the following claims.

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

1. In a brush, a sealing-jacket for the bristles formed of a blank of sheet metal and having its meeting edges overlapped and interlocked and crimped, substantially as and for the purpose set forth.

2. A brush, comprising a frame, a bristle-anchor carried by the frame, bristles turned over and embracing the bristle-anchor at their central portion, and a sealing-jacket surrounding the bristle-anchor and having its sides bowed or curved to compress the portion of the bristles embracing the anchor above and below said anchor, substantially as and for the purpose set forth.

3. A brush, comprising a frame, a bristle-anchor carried by the frame, bristles turned over and embracing the bristle-anchor at their central portion, and a sealing-jacket formed of a blank of sheet metal surrounding the bristle-anchor and upper portion of the bristles and retaining the latter by compression and having the meeting edges of the sheet-metal blank interlocked and crimped at the side or edge corner of the brush.

In testimony whereof I have signed my name in the presence of the subscribing witnesses.

CHARLES ARTHUR FOGARTY.

Witnesses:
JOS. REED LITTELL,
BESSIE COSTIGAN.